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ORIGINAL ARTICLES

THE USE AND ABUSE OF INSTINCT IN SOCIAL PSYCHOLOGY

BY WILLIAM MC DOUGALL

HARVARD UNIVERSITY

DISCUSSIONS of Instinct in Man have appeared so frequently of late in the journals as well as in books that many readers are, no doubt, tired of the topic and would like to see it strictly barred for ten or twenty years. Yet the discussion must go on until we can arrive at something like a consensus of expert opinion. For no one can deny the importance of the questions at issue. Until the psychologists can achieve such a consensus, the students of the social sciences must continue to build on most unstable foundations.

Recent years have seen the publication of many books and papers the main theme of which has been the application of the notion of human instincts to the advancement of the various branches of social science. Still more recently these efforts have provoked a violent reaction, and hardly a week passes without the appearance of some article which attacks these attempts, pours scorn or ridicule upon them, and proposes to repudiate completely the notion of Instinct in Man, or at least complains in severe terms of the abuse or excessive use of the notion by the social scientists.

In most of these articles my 'Social Psychology' is pointed to as a main source of the trouble. I have no wish to repudiate the responsibility which is thus laid upon me. Since ceasing to be wholly absorbed in the tasks demanded by the war, and especially since coming to this country, I have been gratified to find that my little book has exerted a very considerable influence. The mere fact that the publishers have found it necessary to reprint it rather oftener

than once a year since its appearance in 1908 would fix a considerable responsibility upon me. And if, as many of the recent critics maintain, my conception of Instinct in Man is wholly false, and the account of moral character and will which I have elaborated on that basis therefore wholly fictitious, my responsibility is indeed heavy. If I could be convinced that these adverse criticisms are well founded, I should, I hope, at once do what I could to suppress the book. But since, after giving respectful attention to them, I remain convinced that my book, however much in need of correction in detail, embodies the psychological truths (or hypotheses) which are of most importance to all the social sciences, because forming their essential foundation, I feel that the time has come to attempt some answer to the more radical critics. I propose also to take this opportunity to examine some of the views on this topic which are allied to my own and which have been put forward since the publication of my book; and, where I fail to agree with them, to indicate the grounds of my disagreement. Finally I shall try to make clear in what way my own view of the nature of Instinct has developed.

Before entering upon this program I venture to set down certain facts which support my confidence. Let us suppose for the purpose of discussion that human nature, or the innate constitution of the species *Homo sapiens*, does actually comprise some such factors as I, following James, have called instincts or instinctive dispositions and which by older writers, such as Dugald Stewart and others of the Scottish philosophers, were called implanted or instinctive propensities. How may the fact be established among the truths of science? It is clear that it cannot be established by simple direct observation or experiment, in a way comparable to the processes by which the existence of the pineal gland, the presence of the 'blind spot,' or the reality of the circulation of the blood, have been proved. The existence of instincts in man must always remain an hypothesis, justified, if at all, by its co-ordinating in an effective manner an immense range of facts of immediate observation, facts of human and animal behavior and of human experience. Those who will not take the trouble to survey and to reflect long and carefully on these facts, and those who are incapable of marshalling a large array of facts and of weighing hypotheses in the light of them, can never be rationally convinced of their existence, or of the usefulness of the hypothesis that they exist. That is to say that, like the more abstruse truths or hypotheses of the physical and biological sciences, the nebular hypothesis, the exist-

ence of the ether, the atomic constitution of matter, or the reality of natural selection as a factor in organic evolution, the existence of instincts in man can never be a matter of demonstration to more than a very few; the rest of the world will accept them, or reject them, in obedience to the authority of those few. This being so, the burden of responsibility that rests upon psychologists in this matter is very great. For it is among them that the few whose consensus will determine the opinion of the rest of mankind must be found or created. Hence, the importance of achieving, if possible, some such consensus. Unhappily we are very far from that goal. It is true that popular speech and popular literature continue to use the word 'instinct' as freely as ever, perhaps more freely, with a minimum of meaning and a maximum of vagueness. I claim no support for my view in that fact. More important is the fact that the authors of a number of books on psychology, on education, and on various branches of social science have adopted my scheme of the human instincts, incorporating it in their books and giving it a more or less qualified approval. It would be possible to make a considerable array of the names of such authors. But I refrain; for I agree with what is, no doubt, the opinion of my critics, namely, that the great majority of these writers are concerned primarily to expound and to apply current doctrines of psychology, and that they cannot fairly be claimed as thinkers who have independently weighed the evidence and reached a conclusion in the light of a thorough preparation for such evaluation. Yet there are a few authors of this class whose agreement I may fairly claim as strong support for my view. Chief among these are Dr. Drever and Professor Stout. Unfortunately, from my point of view, both these eminent psychologists carry less weight than they should with many of the young bloods of psychology, because they are open to the serious charge of being philosophical. Drever is the only critic of my view who has given evidence of a thorough examination of it; and in the main he accepts and endorses it, with, of course, some suggestions for the modification of it. His endorsement is valuable, not only because it comes from a highly competent professional psychologist who has devoted special attention to the problem and to the history of opinion upon it, but also because (as he has informed me) he approached it in a somewhat adverse attitude, rather than with any prepossession in its favor.

Stout, in the third Edition of his Manual of Psychology (1913), expounds Instinct in a way with which I am happy to find myself in

almost complete agreement; and he cites, without binding himself to its acceptance in detail, my list of human instincts.[1]

More important perhaps than the agreement of these more theoretical psychologists is the endorsement of my view by certain applied psychologists who have adopted it as the guiding hypothesis for their practice and have found that as such it gives satisfactory results in their fields of work. For even those who are not confessed pragmatists must, I think, agree that, in this question, such testing by application to practice must be the final court of appeal. I find, therefore, much comfort in the fact that Dr. Morton Prince, eminent both as a theoretical and as a practical psychologist in the field of nervous and mental disorder, finds my scheme useful in the interpretation of cases and as a guide to actual therapeutic procedure and, therefore, gives it general endorsement.[2] A physician of great experience and distinction in another field of medicine, the care of the mentally deficient, Dr. H. Goddard, has endorsed the scheme on similar grounds.[3]

In the field of ethics Professor W. K. Wright has found it illuminating, has illustrated its application in a number of articles, and has given it his general approval.[4]

I am also encouraged to believe that my scheme is not utterly without basis in fact by private communications from a number of experienced teachers in psychology and education, who assure me that they have found my book valuable, both because it provides a type of psychology in which they are able to interest their students, and because they themselves find it helpful in the interpretation of human experience and behavior.

With so much encouragement I should show a craven spirit, if I should shrink from the task of defending my scheme against its more radical critics and of amending it in the light of the many dis-

[1] Especially important in relation to the main topic discussed in this article is the following passage: "Such behavior as this [that of a wasp] shows clearly that instinct does not consist merely in a congenital arrangement through which a certain stimulus elicits certain movements. What it essentially involves is rather an impulse which requires for its satisfaction the doing of something in the sense of achieving a certain perceptible result. If the given situation at once evokes the movements required to produce this result, there is no renewal of effort with variation of procedure. Otherwise what we can only call fresh attempts are made involving more or less novelty of adjustment. To some extent the nature of the new adjustments may be provided for by the inherited constitution of the nervous system. But this explanation seems plainly inadequate to cover the relevant facts." (p. 346.)

[2] In "The Unconscious," and in several articles in this Journal.

[3] 'Psychology of the Normal and the Abnormal.'

[4] 'Journal of Philosophy,' January, 1921.

cussions which have revealed various degrees of agreement in principle, with differences in details.

THE CRITICS OF INSTINCTS IN MAN

It is common to most of the writers who attack or belittle the conception of human instincts, that they do not select for criticism any one author's scheme of instincts, mine or another's, but disparage the conception in general by citing whatever seems most open to objection in the expositions of various writers and in the popular and literary use of the word 'instinct.' Thus, by implication, they involve each exponent in the odium of the errors committed by all. I protest that this is not playing the game. Let each of those who seek to banish Instinct from human psychology and to reduce the human mind once more to Locke's *tabula rasa* select one or two of the exponents of Instinct whose work seems most worthy of their steel, and let them criticize that work as thoroughly and severely as possible. In that way they may achieve their purpose; but not by selecting arbitrarily a few points and statements from many exponents and throwing cold water upon them.

Those who reject the view that human nature comprises instincts or innate tendencies which operate in adult life in a way that renders an understanding of them important for the social sciences, fall into two groups: (1) those who deny all instincts to man: (2) those who admit certain simple human instinctive tendencies, such as that of the babe to suck, or to hang by the hands, or to wail, or to grasp at seen objects; but deny that these or other innate tendencies continue to play any important part in later life. The difference is slight, and chiefly a matter of terminology; the former call all such infantile movements reflexes; the latter distinguish between such simple instinctive tendencies and reflexes.[5] They agree in the main in demanding that any movement attributable to Instinct must be observable in young infants before they have had opportunity to learn such movements.

This demand is utterly unreasonable. Suppose it to be true, for the sake of the argument, that the human species resembles all the higher species of animals in being endowed with a sexual or reproductive instinct. Are we to ignore this fact forever, because the human infant gives no unmistakable signs of its operation within

[5] I shall for brevity's sake class all these writers together as 'deniers' of human instincts.

him?[6] This is only the clearest instance of the misleading nature of this demand. Even though it were true in principle that we inherit nothing in the way of active tendencies beyond some very simple sensori-motor responses, it would yet be impossible to determine the nature of all these by observation of young infants; and there would be no warrant for rejecting all that are not demonstrably present in infancy Development is, at every stage, from the moment of the fertilization of the ovum, a matter of the interplay of innate constitution and environment; and we can never hope to ascertain just what is wholly innate and what is wholly due to environmental influences. When, then, such writers as Professor Thorndike and Mr. J. B. Watson send us to the new-born babe as the only authentic source of information on the human instincts, they are laboring under a delusion and harboring an ideal of knowledge which, from the nature of things, can never be attained. By the same reasoning (as indeed by most of the arguments used against instincts in man), we should, if we accepted it as valid, be compelled to give up instincts in animals also.

Many of the arguments used are so haphazard and *ad hominem* in character that to answer them in detail would be a tedious and thankless task. An example of this class must suffice. Mr. E. Faris[7] picks out for specially emphatic rejection my conception of a maternal instinct. He tells us that the belief in this has caused much suffering to children and that Mr. J. B. Watson has drawn our derisive attention to the spectacle of an inexperienced young mother bathing her infant. The implication is that the maternal instinct in the mother is supposed by me to enable her to perform all the movements necessary to bathing her infant as effectively as a mother-cat licks her kittens. He goes on to clinch the case by asserting that "by the criteria of McDougall it would be entirely possible to make an irrefragable argument for the existence of infanticide as a human instinct." For, says he, infanticide is and has been widely practised among many races and occurs in animals. He admits that "infanticide is not universal, yet no instinct is without exception.

[6] Incredible to relate some of these deniers of instinct ask us to believe that all the sexual behavior of men is the expression of reactions, tendencies or conditioned reflexes acquired during the life history of the individual. "All our sexual appetites are the result of social stimulations. The organism possesses no ready-made reaction to the other sex, any more than it possesses innate ideas." Mr. Z. Y. Kuo, Journal of Philosophy, November, 1921.

[7] "Are Instincts Data or Hypotheses?" American Journal of Sociology, September, 1921.

. . . It is undoubtedly very widespread among civilized people, but is now usually concealed. It could also be argued that infanticide had, originally, a survival value."

He omits to notice that infanticide, unlike the maternal instinct, is not absolutely essential to the continuance of most of the species of mammalia, as well as of many other animals. But the proper reply to such scepticism regarding the reality of this instinct is to ask how the sceptic proposes to account for the behavior of human mothers towards their infants, for their devotion and delight and for their care, however lacking in skill it may be. Is he prepared with Bain to explain all these manifestations by the principle of association with the pleasures of contact? And if not, how otherwise? This points to the essential weakness of the position of some of these deniers. They are content to reject and deny, and they fail to give us any constructive suggestion that might contribute however slightly towards a foundation for the social sciences. They make play with the magic term 'reaction-pattern' and that is all.

More serious is the indictment of 'instincts' by Professor Knight Dunlap.[8] After admitting that certain unlearnt muscular and glandular performances resulting from sensory stimuli may be regarded as instincts in the physiological sense of the term, he goes on "to ask whether there are 'instincts' in the teleological sense — the sense in which the term is used in McDougall's Social Psychology"; and he reaches the conclusion that, in this sense of the word, "for psychology there are no 'instincts.' "

He asserts that, in the sense of the term which he attributes to me, an instinct is a group or class of all activities which lead to 'results obtained in the outer world' of a certain kind. "Thus, the 'instinct of flight' includes all those activities which result in a get-away from a dangerous locality. . . . The 'gregarious instinct' is the composite of activities which result in forming a herd and holding it together, and so on through the list." He adds in parentheses, "Of course I mean that the tendency to these activities constitutes the 'instincts,' but the shorter expressions are not misleading." I protest that they are extremely misleading and that the use of them is at the root of the trouble. What I have maintained is not that instincts are activities or groups of activities, but that instincts are innate dispositions and that, though the movements incidental to such activities as 'result in the formation of a herd and holding it

[8] "Are there any instincts?" JOURNAL OF ABNORMAL PSYCHOLOGY, December, 1919.

together' may be largely learnt or acquired, yet the innate disposition continues to be an essential factor in such behavior, without which such movements would not be directed in such a way as to achieve this result.

Professor Dunlap holds that such grouping of activities according to the kinds of result they achieve is purely arbitrary and a matter of convenience only. "The grouping of activities into 'instincts' may be admitted to be a useful procedure, if it be clearly understood to be a device of convenience only, similar to the arrangement of documents in a well-ordered filing system. . . . We may classify 'instincts' under two, four, twenty, or a thousand headings, according to the particular purposes we have in view, may then use another classification for another purpose." But such grouping has no value for psychology, he says; and he demands a 'psychological grouping.' Well, I admit that if we were confined to a behavioristic standpoint and forbidden to seek light on instinct from our own experience, it would be difficult to provide any psychological support for the notion of human instincts. But Dunlap deliberately ignores the fact that I have insisted upon a psychological ground for the classing of activities and the reference of them to instincts; namely, the qualities of the emotional excitements that accompany various types of behavior. Instead of carefully examining my view, he gives us a few scornful references to those who postulate a moral and a religious instinct, or an instinct to imitate, to Freudians and to Trotter, and concludes by saying — "I am at present inclined to think that the possibility of discovering social psychology rests upon the possibility of discovering psychological groupings of instinctive activity"; which possibility is exactly the one I have endeavored to exploit, though Dunlap ignores my attempt.

Professor Kantor[9] has made a vigorous onslaught on my view. The burden of his indictment seems to be similar to that of Professor Dunlap; but I must confess that, owing no doubt to my own obtuseness, I cannot make out exactly what is the ground of his quarrel with me. I gather, however, from an article by one of his pupils that he conducts an anti-instinct campaign. Yet he seems to accept the existence of human instincts; and he makes the following suggestion to explain the empirical fact that instinctive activity seems to be commonly associated in time with emotional excitement. Emotion has no intrinsic connection with instinct; but only an indirect one. The

[9] "A functional view of human Instincts," "Psychological Review," January, 1921.

function of emotion is to produce a state of cerebral dissociation in which all thinking is impossible. When this state has been induced, the instincts are released from the control of the cerebrum and manifest themselves as bodily movements. Thus, if I am frightened by a sudden sound while wandering through a wood, and if I run away, the running away is an instinctive train of movement; but its relation to the emotion of fear is merely that the fear has dissociated my cerebrum, so that I cannot think; and the lower-level reflexes, thus freed from control, then break out in the form of the movements of my legs. It is not easy to see why, if this view of the function of emotion be true, the qualities of emotional excitement should vary in a constant fashion with the general character of the instinctive activities they accompany, why we should feel fear when we shrink and run, anger when we strike, disgust when we spew out, curiosity when we draw near to examine. It is much, however, to find a critic who does not content himself with observing of this feature of my theory that there is no such relation of concomitance between instinctive activity and emotion as I have drawn attention to and sought to explain; and who offers some suggestion, however unsatisfactory, as a substitute for my view.

Professor Lloyd Morgan is a high authority on animal instinct, with whom no wise man will lightly disagree. His many discussions of the topic are always carefully thought out. But to me it seems that his inability to recognize in the human species such instincts as I have described is rooted in the same error which is implied or dogmatically asserted by almost all of these critics. In his latest discussion,[10] after carefully distinguishing learnt from unlearnt modes of behavior, he goes on to recognize as founded in man's innate nature the two tendencies that I have called 'self-assertion' and 'self-abasement.' He illustrates and abundantly recognizes their importance in human life. He says — "Can there be any doubt that both these tendencies are there in the inherited make-up of each one of us? . . . In almost everything that we do, now one, and now the other gets expression. . . . The teacher who knows his business plays upon these complementary traits in the characters of his pupils. If both be present by nature in something like due balance, he seeks to bring it about that each finds its proper place and time in the life of the boy or girl." — And so on. Further — "It is tolerably obvious,

[10] 'Instinctive Behavior and Enjoyment,' British Journal of Psychology, vol. XII pt. I.

then, that if we speak of these as modes of instinctive behavior — if with Professor McDougall we place them on the list of man's 'primary instincts' — we should clearly realize to how large an extent the purely instinctive factor is masked by manifold acquisitions in the life of human folk. . . . Still there is present an unlearnt core at the heart of so much that is learnt."

I hardly know whether I may accept the passage from which I have cited these sentences as an acknowledgment of the essential correctness of my view. I have myself elaborately discussed in a succession of chapters the processes by which such instinctive or 'unlearnt cores' became overlaid and disguised in the long process of growth from infancy to manhood. But my essential contention is that in the adult the 'core' is there; that without it these modes of complex behavior which involve it would not have been acquired; and that, if the 'core' were somehow extracted (even in the mature man) these forms of behavior would cease to be manifested; just as in the old man in whom the fire of sexual desire has died out, the attitude and behavior and feeling towards women is radically modified; even though some old men in that state may maintain by artful acting an appearance of youthful gallantry.

Such 'unlearnt cores,' it is my main contention, are the mainsprings of human action. But I do not think that Lloyd Morgan intends to accept my view, although his language might easily be interpreted in that sense. When he says 'unlearnt core' he means, I think, some element of bodily action, some combination of muscular contractions, which was provided for by innately organized connexions of motor neurones and which still may on occasion be manifested among the more complex combinations of adult movement. What I mean by 'core' is the capacity in a man for impulse towards the kind of goal to which such behavior is directed, the capacity for desiring that end, the admiration of the crowd, the homage of his peers, the praise of his superiors. What I maintain is that, if the 'unlearnt core' were extracted from a man, all that type of behavior and feeling would cease in him; that he would cease to be ambitious, or proud, or vain, or eager for praise. What Lloyd Morgan means, I take it, is that in such a case the man's muscular combinations, upon occasions appealing to his self-assertive tendency, would be modified by the subtraction of the unlearnt elementary combinations which have entered into the more complex acquired combinations.

If I am wrong in this interpretation of Lloyd Morgan's meaning,

I shall be delighted to know it; and indeed his article on 'Instinct' in Hastings' 'Encyclopedia of Ethics and Religion' almost compels me to suppose I am in error. For in that article, in which he treats of human instincts, he has written almost as I should have desired to write myself. A large part of the article is in fact and confessedly an exposition of my view."[11] But, in spite of this appearance of near agreement, I feel sure that there remains a deep lying difference between us, and that this is the same which divides me from almost all of the critics of instinct in man. It is this. Lloyd Morgan and these other critics are mechanists. All their thinking, all their explanation of human behavior, is limited and hampered by their assumption of the truth of the mechanistic dogma. Having, on one ground or another, adopted this metaphysical position, their reasonings and conclusions are dominated by it. They cannot conceive impulse, or admit the reality of purposive striving, of desire or aversion, of will or effort; and, when they use the word 'tendency,' they do so only in the same sense in which one may speak of the tendency of water to find its own level. All these terms, as used in common speech, in literature, or in psychology, have become meaningless to them. For them all human action is reflex action, the mechanical issue of nervous currents initiated by sense-stimuli and running along pre-formed channels of greater or less complexity. In their view, all that can be inherited in the way of tendency or predisposition to movement is of the nature of motor mechanisms, more or less fixed conjunctions of sensori-motor channels, after the pattern of spinal reflex-arcs. Holding this view with the utmost confidence, their view of Instinct is completely governed and shaped by it. Hence their denial that instincts in man are of any significance for adult life or importance for social psychology. For, they argue, implicitly

[11] In another recent article ('Instinctive Disposition,' Scientia October, 1920) Lloyd Morgan again seems to come very near to accepting my view. He there distinguishes instincts of three levels: (1) simple motor tendencies; (2) mid-level instincts — "those with which many writers on instinct, Dr. McDougall for example, almost exclusively deal"; (3) two comprehensive instincts comprizing "(a) all the behavior which falls under self-preservation; and (b) all the behavior which falls under race-maintenance." He observes: "It is of course with respect to these low-level instincts, swimming, pecking, scratching the ground, and the like, that it may appropriately be said that the overt behavior just comes as a completely integrated system of reflexes. The case is different with the mid-level instincts. It would savour of extravagance to assert that the instinctive behavior observed when a male warbler in his first year proceeds to secure a territory is nothing more than a compound reflex. I should not describe what Dr. McDougall calls the instinct of pugnacity, which, as he treats it, is distinctly of mid-level status, in such terms." On this I would comment that most of the alleged lower level instincts are not instincts in any proper sense but rather motor mechanisms and that the alleged high-level instincts are merely what Dunlap calls teleological groupings of activities which may spring from a variety of instincts.

for the most part, the number and complexity of such fixed innate reflexes in man is very small relatively to the number and complexity of the nervous paths which are built up in each of us during the course of growth and education and which constitute the essence of all that they understand by 'mind.' Hence, in the adult, they hold, though the innate reflex paths may continue to exist and function as subordinate constituents of acquired 'reaction patterns,' (and for this reason they for the most part are willing to admit an instinctive element or 'core' in human behavior), such innately organized arcs are of vanishingly small importance in the vast complexity of pathways of the adult brain.

Lloyd Morgan holds 'the mechanistic dogma' consciously; telling us that as a man of science he holds himself bound by it, though as a philosopher he is free to throw aside its trammels. He tells us that to think in any other terms is to enquire into 'source,' a thing forbidden to men of science, though permitted to philosophers;[12] and he promises us a treatise in which he will write as a philosopher.[13] Pending the appearance of this work, I can only say that his distinction between the functions of science and of philosophy seems to me ill-judged and ill-based; and that his own many grapplings with the problem of Instinct seem to me to illustrate most forcibly the hampering effect on scientific enquiry of any such fixed metaphysical doctrine as the mechanistic assumption.

In some of the other critics this mechanistic dogma seems to be so firmly embedded that they are hardly conscious of the fact that they hold it and that it is the implicit premise of their reasoning. They have imbibed it and assimilated it as they took their mother's milk; and they cannot conceive that any sane man of science may fail to accept it with their own child-like and happy confidence. Some express this confidence naïvely; in others it can be inferred from their language, e. g., when they bring against those of us who refuse to be bound by any metaphysical prejudices the charge of mysticism, theological bias, or metaphysics. This naïvely dogmatic attitude is exhibited very prettily in recent articles by Mr. L. C. Bernard[14] and Mr. Z. Y. Kuo.[15]

Mr. Bernard begins with a dogmatic definition. "An instinct

[12] "Instinct and Experience."
[13] Concluding paragraph of article, "Instinctive Behavior and Enjoyment," loc. cit.
[14] "The Misuse of Instinct in the Social Sciences," Psychological Review, March, 1921.
[15] "Giving up Instincts in Psychology," Journal of Philosophy, November, 1921.

is not only an inherited action pattern, but it is also definite. . . . Patterns of action, thus determined by the inherited organization of structures, we call instincts." He then cites examples of the loose usage of the word 'instinct' common among sociological writers, deprecating such usage. In this respect I am in entire agreement with the strictures of Mr. Bernard; as he will see, if he will look at the first chapter of my 'Social Psychology.' He goes on to say — "This vague employment of the term instinct finds its logical *reductio ad absurdum* in the application of the term to well-developed habit complexes, such as the 'instincts' listed in the classification in McDougall's 'Social Psychology.' . . . The most cursory analysis of the origin of the action patterns involved in such so-called instincts as the parental instinct, reproductive instinct, fighting instinct, and the instinct of self-preservation, the gregarious instinct, and the like will show that by far the majority of the action content is acquired. Most of what a parent does for a child . . . belongs to the category of acquired habit. . . . The same is true of the content of the other so-called instincts mentioned in this paragraph. To characterize such habit complexes as instincts implies either the abandonment of the accepted and desirable definition of instinct as stated above or a failure to analyze the structure of the acts involved." These passages exhibit clearly the purely deductive origin of the anti-instinct bias. The same note runs throughout this essay. Its conclusions are always deduced from one implicit metaphysical assumption, namely that the mechanistic dogma is true; the use of any conceptions which imply an open mind towards this ultimate metaphysical problem is characterized as mystical, metaphysical, animistic. Those who conceive that instinctive action implies a 'tendency' or 'urge' or 'motor impulse' are further charged with having failed to fall under the domination of the theories of Mendel and Weismann. Mr. Bernard *knows* that natural selection has been the sole and sufficient agency of organic evolution and is, therefore, able to deduce the nature of instinct from this dogma also. He disposes of my theory of the relation of emotion to instinct in the same easy deductive fashion. "A purely instinctive action pattern, functioning without interruption or hindrance, should develop no consciousness and therefore should be without a characteristic emotion such as McDougall insists upon. However, when the inherited action pattern . . . does not work smoothly . . . it is probably impossible for any instinct to function with complete automaticity — consciousness, including

emotion, enters into the process. . . . Consequently, the less instinctive an act is, the more emotion . . . it is likely to develop. The complex habit dispositions should therefore have more emotional content than any constituent instinctive element." They should have; therefore they have. The conclusion is thus deductively established that emotion "is the result of the weakening of an instinct rather than of its dominance. This line of argument," he continues, "leads us to deny some further implications of certain highly sophisticated types of definitions of instinct. For example, the claim of some authors that instinct involves a conscious element is clearly untenable. Such writers have lost sight of instinct as it appears in its purest form in the lower animals." One is tempted to suppose that Bernard's confidence in the rightness of his views is here based on an introspective report from some lower animal. But he cites no such evidence; his conclusion is reached by pure deduction from his accepted dogmas.

Mr. Kuo is the most radical and logical of the deniers. He denies all instincts, not only to the human species, but also to all the animals; for he carries the campaign against instinct to the logical termination of the deductive process. "The so-called instincts are in the last analysis acquired trends rather than inherited tendencies. . . . To assume any inborn tendency is to assume *a priori* relation between the organism and stimulating objects. . . . Such an assumption is no less objectionable than the theory of innate ideas. As a matter of fact both the theory of instinct and that of innate ideas are based on the same conception; namely the conception of *a priori* relation of the organism to external objects. If it is true that one cannot have an idea of a tree before one has actually seen or learned about a tree, it must be equally true that one cannot have any food trend before one has ever eaten food."[16] Other deniers make similar use of the fact that 'innate ideas' are out of fashion, feeling apparently that it suffices to liken instincts to innate ideas, in order to establish their 'mystical' or mythical nature. But here they are not true to their deductive logic. If, as these mechanists suppose, 'ideas' are a kind of phosphorescence upon cerebral processes, it is not at all clear why cerebral connections should not be innately organized in such a way as to 'phosphoresce' on the first occasion of their exercise. It

[16] Observe the beautiful simplicity of the deductive method. This argument — It must be so, because we cannot understand how it can be otherwise — this has been responsible for most of the monstrosities which have long defaced the text-books of psychology and has been a principal obstacle to the progress of the science.

remains a question of empirical fact. And, as I have pointed out, there is good ground for maintaining that purely instinctive actions are in some cases initiated by acts of complex perception, activities which imply 'cerebral phosphorescence' just as clearly as do activities that involve memory of past experience.

I cannot refrain from citing yet another beautiful example of the deductive method. "Should we have inherited the same instincts as our ancestors of a few thousand years ago, how awkward we would be in adapting ourselves to modern society." From which sage reflexion, it is implied, we may deduce the conclusion that we have no instincts. Has Mr. Kuo never heard of the view, generally current in the medical world, that the wide prevalence of neurotic disorders is due to the difficulty of adapting our instinctive equipment to the demands of modern society? How do the deniers of human instincts propose to account for, interpret, and deal with these disorders? In this important sphere of applied psychology, as in all the others, they would take away the one fruitful working conception that we have, without offering us any constructive suggestion in place of it.[17]

Mr. Kuo then proceeds to 'a reinterpretation of man's native equipment.' "The human infant is endowed with a great number of units of reaction. . . . The reaction units are what we find in the child's spontaneous activities and random acts. . . . Such spontaneous and random acts are all that we can credit to the native endowment of man. These are non-specific instincts, for they are reflexes in character and involve few, if any, complex neural patterns. . . . These reaction units are the elements out of which all the co-ordinated acts of the organism are integrated." Mr. Kuo out-Watsons Mr. Watson and proceeds to take the master-behaviorist to task, logically enough. "We may state that such a theory we

[17] In this connexion I would emphasize the fact that the whole of the Freudian psychology, and the analytic procedures founded upon or allied to it, assume the essentially purposive or teleological character of mental life, and are absolutely incompatible with the notion that human nature comprizes no innate factors beyond a multitude of mechanistically operating reflex arcs. Though I for one regard the Freudian psychology as defective in many respects, especially in its over emphasizing of the sex-instinct, its world-wide spread and the success in many instances of the procedures based upon it, suffice to prove that it contains much truth and that its fundamental conceptions are not to be destroyed by the deductions from first principles of academic psychologists, whether of the laboratory or the armchair schools. The same may be said of the applied psychology of Dr. Morton Prince, and of those many physicians who in England arrived at a form of analytic mental therapy in the course of handling many thousands of 'shell-shock' cases during and after the war. This British method is represented by the writings of Dr. W. H. R. Rivers and the authors of "Treatment of functional nerve disease," a volume edited by Dr. Crichton Miller and published in 1920.

have so far advanced is not an altogether new one.[18] The importance of the spontaneous and random activities of the young organism has been duly emphasized by Professor Watson. But we cannot agree with him that, besides the activities of this sort, there is another group of innate reactions or instincts. . . . For we have found that the random or unorganized acts in the young babe are sufficient to account for all complex and organized forms of behavior in adults, and that it is not only superfluous but harmful to our genuine understanding of human behavior to assume the existence of any specific instinct." Mr. Kuo writes "We have found," with the implication "I have shown that." In reality he has merely asserted these things, and asks us to accept them upon his *ipse dixit*. Only this and nothing more.

Professor E. Thorndike is sometimes classed by the 'deniers' with the exponents of human instincts. I hardly think that he can fairly be held guilty of the misdemeanor charged. He is, so far as I can judge, really the most vigorous and thorough exponent of the view that there are no human instincts, but only reflexes. An instinct, as I conceive it, namely as an innate disposition which, when brought into play, generates an impulse, an urge, a striving, or a desire for some change in the situation that evoked it, an impulse which keeps the organism uneasy, restless, striving in this way and that so long as it is not inhibited by a stronger impulse or satisfied by the attainment of its natural goal, the changed situation of a specific kind, an instinct so conceived he calls 'a magic potency.' He states that a main *purpose* of his book (he should, I think, in consistency have said 'the main reflex,' for purposes must be for him 'magic potencies') is to advance "thought about the life of man . . . to a level of description which will exclude teleological bits having as their themes such mythical potencies."[19] He describes (pp. 81 and 82) the behavior of women towards children and their interest in children in a way which might seem to be a full acknowledgment of the reality of a maternal instinct in the human species, such as I have claimed for it. "All women possess originally, from early childhood to death, some inter-

[18] Of course it is not a new one. It is the same theory that was elaborated by the British association school from Locke (with his *tabula rasa*) and Hartley (with his vibratiuncules) to Bain with his genesis of mother love by association of the pleasures of contact. The only difference between James Mill and Mr. Kuo is that the former ascribed some 'magical potency' to pleasure and pain; while Mr. Kuo and the other mechanists feel no need for that hypothesis.

[19] "Educational Psychology," vol. I, p. 15.

est in human babies, and a responsiveness to the instinctive looks, calls, gestures and cries of infancy and childhood, being satisfied by childish gurglings, smiles and affectionate gestures, and moved to instinctive comforting acts by childish signs of pain, grief and misery. . . . To a woman who has given birth to a child, a baby to see and hold and suckle is perhaps the most potent satisfaction life can offer, its loss the cause of saddest yearning. . . . In all this, original nature is the prime mover and essential continuing force."

No wonder that, in face of these and similar passages, the deniers include Thorndike among the exponents of Instinct; in spite of his hard-headed remarks about 'magical potencies'! But their reproaches are undeserved. Thorndike is really on their side. In the next paragraph he goes on to say that "This series of situations and responses constitutes the 'maternal instinct' in its most typical form." And the tenor of many chapters is the insistence that any such 'instinct,' so-called, is nothing but a name for a bundle of reflex actions, or of motor mechanisms, each of which is directly connected in the brain with some sensory point through which it may be thrown into action. When the mother kisses her child, suckles it, strokes it, speaks to it, sings to it, weeps over its loss, is consumed with anxiety and works herself to exhaustion during its sickness, she is displaying only so many distinct responses to 'stimuli,' each of which is determined by some one sensori-motor chain of neurones; each of these responses, we are to suppose, has no essential connection with the others; all these displays of maternal love have no relation to one another, beyond the fact that they are all evoked by 'stimuli' proceeding from the same object, and are grouped together by shortsighted psychologists and popular speech by the use of the word 'maternal.' What has become of the 'magical potency' which Thorndike has so eloquently described, the potency of love?

In passing, I would complain that Thorndike, in the course of his criticism and rejection of the alleged instinct of imitation (a criticism and rejection which follows closely my own remarks on this question), takes certain statements of mine from their context and handles them in a way which must give his readers the impression that I have alleged the reality of an instinct of imitation; in fact, one recent writer has been misled into claiming for him this stand against the instinct of imitation as an original stroke of distinguished merit.

I submit that there are two possibilities of error in this deductive

denial of the human instincts. First, it is possible that, even within the limits of the mechanistic dogma, a place and an important place may be found for Instinct in human nature. It may be that the pattern of the nervous system is not constructed on principles so simple as most of our mechanistic behaviorists seem to suppose; that the whole complexity of the brain is not built up by the mere adding of one sensori-motor arc to another. I have myself attempted to sketch a plan of brain-structure which, by the aid of the principle of 'drainage,' would enable us to conceive of instincts mechanically as innate nervous structures, and yet to credit them with a dominant role in adult human life.[20] That sketch is admittedly speculative; but I know of nothing that renders it untenable. I would recommend it to the notice of the deniers as a constructive effort within the limits prescribed by their prejudice.

Some of the mechanists have the merit of seeing that instinctive action has at least the appearance of being purposive, and of attempting to imagine mechanisms within the brain whose workings may result in this appearance of purposiveness. Professor Perry and Dr. E. C. Tolman have recently made such attempts, attempts which, as I have said, seem to me perfectly legitimate; although I do not think that either of these gentlemen has achieved more success in this direction than my own attempt in the article of 1913 mentioned above. Tolman's contribution consists of two parts: first the recognition that instinctive trains of behavior are very variable under similar external circumstances or 'stimuli'; and that the successive actions of such a train exhibit a certain continuity of endeavor, a persistence towards an end, what Stout calls 'conative unity'; in short the recognition that instinctive action cannot be brought under the fashionable formula which he himself lays down so dogmatically, namely the formula of external stimulus and response. It is only by illegitimately denoting as 'stimuli' complex external situations, and also internal processes with which we are acquainted only under the form of memories and conscious expectations and anticipations and conscious emotional attitudes, that the mechanists achieve an appearance of fitting to this formula the facts even of animal behavior. Tolman, for example, becoming aware of this truth, writes as follows:— "Thoughts, or at least the kind of thought with which we are here concerned, can be conceived from an objective point of view as con-

[20] "The Source and Direction of Psycho-physical Energy." A paper read at the opening of the Phipps Psychiatric Institute of Baltimore in 1913 and published in the American Journal of Insanity.

sisting in internal presentations to the organism (on a basis of memory and association) of stimuli not actually present but which would be present, if some hypothesized action were carried out." He hastens to add: — "Such a definition says nothing about the subjective 'immediate-feel' side of thoughts as such" and therefore, is strictly behavioristic and mechanistic. Could anything be more delightfully simple? By this simple trick of legerdemain 'thoughts' are converted into external 'stimuli,' and behaviorism is saved from bankruptcy.

Tolman's second contribution is to attempt to define the mechanism by which the appearance of purposiveness is achieved. This attempt consists, first, in suggesting that the nervous system is not a one-level, but a two-level, organization, that there exists, in short, a brain as well as a spinal cord. — Surely not a novel suggestion! Has Mr. Tolman never heard of Hughlings Jackson? Secondly, in invoking the aid of the formula 'release of a specific determining adjustment.' But, when we look for some account of the mechanism so denoted, we find no glimmer of a suggestion as to its nature. 'Let us here stop and assert that determining adjustment as thus characterized is a definition of *instinct*.' But Mr. Tolman stops just where the problem he sets out to solve begins. We may agree that an instinct may not inappropriately be called a 'determining adjustment.' But what is the nature of the adjustment mechanism? And how does it determine? These essential questions Tolman makes no attempt to answer. Tolman has the merit of having glimpsed the nature of the problem; but of a mechanistic solution of it he exhibits no vestige. The only clues to the nature of such tendencies offered by him are passages which mention "determining adjustments . . . whether one of curiosity, one of anger, or one of fear" and a "man's general socio-domestic adjustment."

Professor Perry[21] carries the matter a little further. He sets out by claiming for behaviorism the Aristotelian conception of the organism. I do not think that this claim can be allowed. First, because Aristotle neither denied the difference between a physical object and thinking of that object, nor proposed to neglect as worthless the facts that he introspectively observed. Perry writes — "The behaviorist concedes that introspection and all its works must find a place in any comprehensive and adequate view of mind." But this is not behaviorism, if we may, as I think we fairly may, regard Pro-

[21] "A behavioristic view of Purpose," Journal of Philosophy, February, 1921.

fessor Watson as its prophet. "The time seems to have come when psychology must discard all reference to consciousness; when it need no longer delude itself into thinking that it is making mental states the object of observation." "We can write a psychology . . . and . . . never use the terms consciousness, mental states, mind, content, introspectively verifiable, imagery, and the like. . . . According to my views, thought processes are really motor habits in the larynx. . . . Psychology, as the behaviorist views it, is a purely objective, experimental branch of natural science which needs introspection as little as do the sciences of chemistry and physics." Such are the uncompromising terms in which Watson laid down the program of behaviorism.[22] They can hardly be reconciled with Perry's statement that "he (the behaviorist) does not deny or intend to neglect any of the data of introspection." Secondly, for Aristotle the organism was essentially a being striving to realize ends; purposive activity, or striving towards an end, was for him a fundamental category of biology, not an appearance to be explained away in terms of mechanical sequences of cause and effect.

Referring to my description of instinctive conation, Perry remarks, "All the characteristics of conation are borrowed from the behavior of the organism except what is comprised under 'feeling of' or 'consciousness.'" But in my description, which Perry quotes, I used neither the term 'feeling of' nor 'consciousness.' I wrote of 'conative experience,' of 'desire and aversion,' of 'impulse,' 'craving' and 'uneasy sense of want.' I submit that the experience of persistent desire or craving is essential to the formation of our concept of conation, that my language implies this, and that the characteristics of conation are not 'borrowed from the behavior of the organism' alone.

Perry also frankly admits the impossible nature of the program indicated by the stimulus-response formula. "In proportion as the organism is unified and functions as a whole its behavior is incapable of being translated into simple reactions correlated severally with external events. . . . Its behavior is 'spontaneous' or internally conditioned. . . . The better the organism is understood, the more does it assume just those characters which James insists upon as the prerogatives of mind [namely purposive selection and interest]." He also recognizes the impossibility of accounting for behavior with-

[22] "Psychology as the behaviorist views it," Psychological Review, 1913.

out reference to 'meaning.'[23] It will be agreed, I think, that Professor Perry, attracted to behaviorism in the interests of his new realism, hardly achieves his purpose of becoming a full-fledged behaviorist.

Nevertheless, or perhaps because of this half-heartedness of his behaviorism, his attempt to describe behavior in mechanistic terms is interesting. He selects the term 'determining tendency' as best suited to his purpose. "A determining tendency is a general response-system, tentatively advancing towards completion, or tentatively renewing itself. Interested or purposive action is tentative action adopted because the anticipatory responses which it partially arouses coincide with the unfulfilled or implicit phase of such a determining tendency." This is a considerable advance upon the reaction-pattern and the stimulus-response formulæ pure and simple, beloved of true behaviorists. But does Perry succeed in making the work of the 'determining tendency' intelligible as a mechanical or physico-chemical fact and process? As Perry rightly says, it has to account for two main features of behavior, (1) the subordination of means to ends, (2) determination of present action by reference to the future. "It is evident that no account of human conduct which fails to set apart some special feature as the connotation of these expressions ('for the sake of' — 'in order to' — 'with a view to,' etc.) will, either in or out of scientific laboratories, seem to cover the facts. It is not sufficient to conceive the organism as making random efforts instigated by a determining tendency; nor is it sufficient that these efforts should cease when one of these efforts succeeds. For there is as yet no act of which it can be said that it is done *with a view to* or *for the sake of* a future act. Random hit-or-miss action is essentially unguided action, which so far as its own immediate determination is concerned is as disposed to miss as to hit."

"The solution would seem to lie in the action of present dispositions which are correlated with future contingencies. A calendar of engagements filled out for the next month exists and acts in the present. Nevertheless it is correlated serially and progressively with the future. Similarly the responses organized and serially adjusted so as to be executed in sequence exist now among the determining conditions of present events. Nevertheless they are functionally

[23] "We do not get the means selected because of its future or implicit relation to the end until the factor of meaning becomes effective." He writes also that man, as compared with animals, "must be capable of a much more complicated far-flung play of meaning."

correlated with a sequence of events in the historical future — in their own future. A series of dated anticipatory responses is thus a projection of the future upon the present spatial field, and provides a means by which the contingent future may be translated into the physically existent present." If we put aside the self-rectifying function of actions directed to a desired end, the capacity of the organism to maintain or restore its train of activity in the direction of the end, in spite of unforeseen disturbing factors, we may accept this scheme as satisfactory. But Perry has neglected to note that his scheme says nothing of the way in which this series of anticipatory responses, this calendar, becomes correlated with the future contingencies. If it exists, it will do its work; as the printed calendar, when it has been made, will do its work. But mind made the printed calendar; and it is just the essential function of purposive, planning, foreseeing mind to prepare, to organize, the anticipatory responses, so that, as the occasions arise, the appropriate responses may be made. The plan, when made, will work; and, if nothing unforeseen happens, may be supposed to work mechanically; but the making of the plan, the seeking it, the selecting of the appropriate steps in anticipation of, and for the sake of, the end, that is the essentially purposive activity, which Perry's scheme merely takes for granted.

It is, however, much that Perry recognizes 'instincts' as other than, and more than, 'reaction-patterns.' Instincts are 'determining tendencies.' "In the typical animal instinct a series or concatenation of responses is innately determined, owing to the fact that the successful completion of each component response in turn furnishes the stimulus for the next. This is sometimes spoken of as a chain-reflex; but the term is misleading because it suggests that the component responses are pure reflexes, whereas the reflexive character lies rather in their sequence. *The component responses themselves are tentative and intelligent.* The segments of the nest-building operation, for example, . . . are performed more or less experimentally and adapted to local conditions. The purposiveness of the behavior lies not in the appropriateness of the several phases to the end-result, but in the persistence and resourcefulness exhibited in each phase regarded by itself." All this is very true. He adds that in the human builder the several phases are subordinated to the end-result as their purpose. "In the case of the latter the domestic complex is guiding the action throughout. Everything which the human agent does from the first consultation with his architect is in some measure

qualified by this meaning and selected on this account. . . . The human builder has subordinated his auxiliary acts to his determining tendency to a greater depth; and in order that this should be possible, he must be capable of a much more complicated far-flung play of meaning." Exactly; the play of 'meaning' is essential to the human builder, and 'meaning,' less rich and adequate, is necessary also to the bird-builder. But of 'meaning' we have no physical account. Purpose and meaning continue to elude the mechanist, however well-meaning he may be and however resolute in the pursuit of his purposes.[24]

The second possibility of error in the deductive denial of Instinct is that the mechanistic dogma may not be the last word of metaphysical truth. I, for one, prefer to approach the problems of psychology with an open mind, and to seek such fundamental categories as may seem most useful and fruitful in the interpretation of human experience and human and animal behavior, without prejudice. I refuse to be bound within the categories of the physical sciences, just because those sciences are, for historically intelligible reasons, more advanced than the biological sciences. I submit that the present time, when all those categories of the physical sciences are so obviously in the melting pot, is one when even the least independent biologist might be expected to find the courage to claim for his science its elementary rights. I claim that for psychology the most fundamental category is that of purposive action; and that we are entitled to use it freely as such, leaving to the future the problem, at present insoluble, of determining the relation of purposive action to mechanical process.[25]

I submit, then, that the deniers, rather than the exponents, of instinct are determined in their attitude to our problem by metaphysical prejudice; and that, if the mechanistic dogma be put aside and the facts of human experience and of human and animal behavior be impartially surveyed, we are fully justified in accepting the conception of instincts in the human species as innate tendencies to pursue

[24] Here I may refer to my discussion of meaning in 'Body and Mind,' Chapter XXII.

[25] It is unfortunate from the point of view of my standing in this controversy that I am known as the guilty author of a book entitled 'Body and Mind, A History and Defense of Animism.' For it is natural that the conclusions towards which that enquiry inclined me should be held to have determined me to a vitalistic or mystical or theological view of Instinct. In defense, I can only point to the fact that my 'Social Psychology' was written four years before the other book, and that, to the best of my belief, my view of instinct was not determined by, and is not now appreciably affected by, any firmly held view of the 'Mind and Body' problem, but arose out of an unprejudiced survey of the facts as I saw them. But, worse still, I am known as one who takes an interest (I had almost ventured to write 'an intelligent interest') in the problems of 'Psychical Research.' This aberration from the path of sanity I must not attempt to excuse on this occasion. I shall hope that it will be attributed to nothing worse than a single kink in some one brain-path.

by purposive actions certain biological ends, roughly definable as mating, the cherishing of offspring, the escape from situations of certain types, the breaking down of opposition to impulsive or purposive striving, the better acquaintance with strange objects, the dominance over one's fellows, the presence or companionship of one's fellow creatures.[26]

It is convenient to insert here the third part of the program of this paper as stated in the opening paragraph, namely a concise statement of the principal change which my view of instinct has undergone, since the first publication of my 'Social Psychology' in 1908.

At that time I was still influenced by the widely accepted view that an instinct is merely a motor mechanism, a system of motor neurones so organized that, when excited in any way, its excitement issues in some particular movement, the co-ordinated contractions of certain muscles. This view was at that time held, not only by Professor Lloyd Morgan and by the dogmatic mechanists, but also by Professor Stout and also by Mr. Shand (by whom I gather it is still held), two psychologists to whom I am glad to acknowledge my indebtedness. Accordingly, I attempted to combine that view with the hormic view of instinct, the view that instinctive action involves or expresses an urge, an impulse, a striving towards some goal by the attainment of which it may be allayed and satisfied. My attempt was, as it now seems to me, necessarily unsuccessful; because the two notions are radically incompatible. It has been pointed out by many of the recent critics of instinct (especially by Professor Dunlap and Mr. Kuo) that the behavior which is regarded by 'instinct psychologists' as the expression of some one instinct may involve a succession of very various co-ordinated movements. Dunlap remarks that "there are very few actual responses of the animal which do not form part of a number of 'instincts,' whatever the system of classification. The same physiological processes, and in part the same conscious processes are involved, in primitive man, in pursuing a deer for food, and in pursuing a female for amatory purposes. In other cases the same reactions may now be classed as mere 'flight,' now as manifestations of 'gregariousness,' now as manifestations of 'self-abasement.' . . . I am sure that all the activities, physiological and psychological, of which the animal is capable, participate

[26] I hope to publish shortly a more complete restatement of my view of the instinctive endowment of man.

at some time or other in the expression of the 'reproductive instinct.'"

The observation is perfectly just. But the conclusion, that there are no instincts, does not follow from it. It follows rather that we must remodel our conception of Instinct and must reject altogether the notion that the essence of instinctive action is the utilization of innately organized motor mechanisms. The facts pointed to by Dunlap and others are especially clear in the case of human activities; but on close inspection of the instinctive activities of animals they are obvious enough. The activities of a pair of pigeons which result in the production of a full-fledged pair of young (so well described by Mr. Wallace Craig) are undoubtedly instinctive in the main, a prolonged cycle of several well marked phases, courtship and pairing, choosing a nest-site and building the nest, brooding, feeding the young, etc.; and these phases involve practically all the motor activities of which the birds are capable, the use of all their motor mechanisms both innate and acquired. The same is approximately true even of any one phase of this cycle. Shall we, therefore, conclude, with our friends the mechanists, that these actions are not instinctive, but merely a series of mechanical reflex responses to sense 'stimuli'; that, when the birds select a suitable corner and laboriously construct their nest, each action involved in this train of activity is a mere isolated stimulus-response, unrelated by anything in the constitution of the animal to the many other movements by which the common end of all these actions is achieved, related only externally and indirectly by their common relation to the physical objects of the environment, the corner chosen and the growing heap of sticks and straws?

Mr. Kuo remarks — "that an instinct has a definite inherited neural pattern few students will deny. But such a conception cannot be applied to many of the supposed instincts. General observation tends to show that the so-called instinctive reactions are very variable. Swindle has reported that even nest-building in birds, which is always supposed to be perfect and definite, involves a great deal of variability of response.[27] When we cannot find any definite responses in instincts,

[27] *A propos* of the same observation by Swindle, Mr. E. C. Tolman remarks, — "The startling thing about this account is that it indicates that, even in the case of those supposedly perfectly adaptive instinctive activities such as nest-building, careful observation may show a considerable amount, and in this case indeed a positively shocking amount, of variability." ("Instinct and Purpose," Psychological Review, 1920.) Since Mr. Tolman begins his article by likening man to a penny-in-the-slot machine and sums up the whole nature of man in the sentence — "The human being is a mechanism which makes responses to external stimuli," it is no wonder that he is startled and shocked at the

we wonder as to the definiteness of inherited neural patterns. The teleological conception of instinct seems to reduce it to a 'trend' or tendency of action, and gives up its neural correlate altogether. But we have shown that the trend is acquired rather than inherited." *Ipse dixit.* The argument is sound enough. It may be stated succinctly as follows. All instinctive actions are merely the mechanical outcome of a stimulus applied to an innately organized motor mechanism or 'reaction pattern.' The actions commonly attributed to an instinct, such as the nest-building instinct of a bird, are extremely various and variable, according to the conditions obtaining at different times; therefore, they cannot be attributed to any one instinct, but are the outcome of stimuli successively applied to a correspondingly large array of motor mechanisms, some of which may be innate, but the majority of which are, in large part at least, individually acquired. Therefore there are no instincts, but only an array of discrete motor mechanisms, some innate, many acquired. The conclusion follows inevitably, if we accept the premises. We stand, then, before the following alternatives. Either we must, with Mr. Kuo, give up instincts in psychology, both animal and human; or we must give up the notion that an instinct is merely a motor mechanism. To me the latter alternative seems preferable.

The fact is that the conception of instinct was formed largely under the influence of accounts of instinctive behavior of animals, which, like those of Fabre, accentuated unduly the appearance of perfect regularity, precision and definiteness of all such behavior. More impartial descriptions [28] show that instinctive action is everywhere and always, if the circumstances demand it, variable and adaptive; that instinctive action is always in some degree intelligent, or expressive of that capacity for purposive adaptation which is the essential function of mind. Even when we go so low in the scale as the simpler animalcules and protozoa, the same fact is revealed by that variation of response which is commonly called 'the procedure of trial and error.'

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variability of the behavior of a mere bird. One gets the impression from reading this (and other similar articles) that it was written by a Martian, a dweller in a world of perfected mechanisms such as Mr. Wells has imagined, who has never seen, still less observed, an animal, and who speculates as to the kind of machinery inside these fabulous monsters; and then, on reading a detailed account of two minutes' actual behavior of an animal, is flabbergasted to find all his guesses upset and the animal totally different from the naïvely speculative accounts with which he has long been familiar.

[28] For example, the admirable description of the behavior of wasps which we owe to Mr. and Mrs. Peckham.

Here, then, is the parting of the ways clearly defined. Either instinctive action is purely and wholly reflex action, more or less compound (as Herbert Spencer said), and the mechanists are right in asking us to reject the conception of Instinct from psychology; or instinctive action is distinct from mechanical reflex action, and an instinct is not, and does not essentially comprize in its organization, any motor mechanism. If we take the latter view, we must recognize that an instinct, or a given instinctive impulse, may make use at need of a large array of motor mechanisms, different instincts expressing themselves on different occasions through the same motor mechanism; although it may be true that any one instinct most readily finds expression through some one such mechanism, or through some one co-ordinated system of such mechanisms. This is the alternative which, I believe, we must accept.[29] This is the novel contribution to the theory of Instinct which I herewith propound. I have needed nearly twenty years of observation and reflection to reach this conclusion — so strongly was I influenced by the reflex-arc concept and the mechanistic dogma.

It is, I think, true to say that, with the outstanding exception of Professor Lloyd Morgan, the deniers of human instinct are not authors who have made any profound study of animal behavior or of the problems of organic evolution. It is difficult to understand how any one who has made such studies can deny the importance of human instincts, without denying it also in the mammals in general, or without denying the continuity of evolution of man from the animals. Few or none of them would, I suppose, adopt the latter alternative. And, if they choose the former, how are they to account for much of the behavior of the higher mammals, without ascribing to them a degree of intelligence quite incompatible with the clear evidences of their relatively low intelligence? Surely the similarities and analogies between human and animal behavior in the sphere of sex alone suffice to require an essential similarity of the principles of explanation that we apply to them and to ourselves. Among close students of animal behavior we do not find many who reject or minimize the importance of Instinct, whether in man or animals. I would cite

[29] There is a third possibility which it is hardly worth while to mention at the present stage of the controversy; for it would shock our mechanists too cruelly. Namely, it is possible that even the most typical spinal reflex movements, such as those of the scratch-reflex of the dog, are not truly mechanical, that they cannot be adequately explained or described in terms of the physics, chemistry and mechanics of the present day; that they are rather to be assimilated to the type of the purposive instinctive action; that they are lowly members of that family.

especially Professor Wallace Craig[30] and Professor W. M. Wheeler.

Professor Wheeler has made some observations which are so much to the point that I cannot forbear to cite them. "After perusing during the past twenty years a small library of rose-water psychologies of the academic type and noticing how their authors ignore or merely hint at the existence of such stupendous and fundamental biological phenomena as those of hunger, sex and fear, I should not disagree with, let me say, an imaginary critic recently arrived from Mars, who should express the opinion that many of these works read as if they had been composed by beings that had been born and bred in a belfry, castrated in early infancy and fed continually for fifty years through a tube with a stream of liquid nutriment of constant chemical composition."[31]

I am inclined to offer a more realistic explanation of the attitude of some of the deniers of instinct. I would suggest that their type of psychology, the strictly behavioristic and mechanistic type, may be characterized as the psychology of the Apartment House, the abode where children, servants, and animals are reduced to the minimum and mechanism reaches its acme of development. Who knows how much and how subtly he is molded by his environment, in spite of his instincts?

An objection to the use of 'Instinct' in human psychology of a different type comes from Mr. G. C. Field.[32] Like so many others, he does not confine his criticisms to any one exponent of instinct, but flits over the field, picking holes wherever he sees a soft spot. Some of his criticisms seem to me to be well founded, especially perhaps his strictures upon Mr. Trotter's riotous use of the conception of 'herd instinct.' But his main contention I cannot accept. It is this. To explain any human action by referring it to an instinct is, he says, strictly similar to explaining it by reference to a faculty, in the sense of the old faculty-psychology. For, says he, we know nothing of the alleged instinct beyond the action from which we infer it and which we take to be its expression. And he rightly insists that, unless the attribution of any particular action to an instinct conveys or implies some knowledge which is not obtainable by mere inspection of the action, such attribution is otiose and merely a mode

[30] Author of a most admirable series of studies of animal behavior. His paper on "Appetites as constituents of Instincts," I would especially commend to the attention of 'the deniers.' (Biological Bulletin, Vol. XXXIV.)

[31] "On Instincts," this Journal, vol. XV.

[32] "Faculty Psychology and Instinct Psychology," 'Mind,' July, 1921.

of concealing our ignorance. Therefore, we may legitimately assert an action to be instinctive, implying that it conforms to a certain type, just as we describe another as intelligent; but we have no justification for attributing any action to an instinct, or to an instinctive tendency or disposition for such action. "We think of Instinct as something in our innate mental structure of which all that we can say is that by virtue of it a person or an animal performs certain actions without previous experience and without foresight of the end. But now what happens when we cease to talk about Instinct and begin to talk about the instincts? What information does it convey to us when we are told that a certain action is due not only to Instinct but to some particular instinct? If such a statement is to give us any real information, it must tell us something more than the general facts which are conveyed to us by saying that the action is instinctive and what is more important, it must tell us something more than we can gather from an inspection of the action itself."

This demand is perfectly just. But Mr. Field is mistaken in supposing that the ascription of an action to a particular instinct conveys no more information than can be obtained by the inspection of the action or conveyed by the statement that it is instinctive or due to Instinct. Consider a concrete example. I return to its cage, after handling it, a young white rat. Its mother hops about it in an agitated manner, then seizes it in her mouth and drags it to the back of the cage. An onlooker, knowing that rats, when short of food, sometimes eat their young, says "She's going to eat it." I reply confidently — "No, it's all right. It's the maternal instinct." In saying that, I imply much that is given neither by simple inspection of the action nor by the statement that the action is instinctive. If the mother-rat proceeds to devour the young one, that shows that I was mistaken. But, if I had merely remarked that her behavior was instinctive, I could not be accused of error; for the act of dragging the young one to the back of the cage was instinctive in this case also, though perverted; was an expression, not of the maternal instinct, but of a very different one, the food-seeking instinct. Thus, in such a simple case, the correct ascription of an action, or a phase of behavior, to a particular instinct enables us to forecast the further course of the train of behavior, and enables us, if desired, to intervene to modify the further course of behavior. In a similar way, if, at a children's party, a lady, usually genial and friendly, displays a perverse irritability which entirely destroys the harmony of the occasion, one might

infer from the general irrationality of her behavior that it was instinctive. But a close observer might be able to explain it more fully by pointing out that she was resentful of what she took to be a neglect of, or insufficient attention paid to, the charms of her own children; and, if he were an 'instinct psychologist,' he would ascribe her perverse behavior to the thwarting of the maternal instinct; further he might, in the light of this interpretation, succeed in restoring the harmony of the proceedings by a little judicious attention to the particular objects of that particular instinct. Now, of course, my critics will rush at me in a body and wildly assert that the lady's cutting remarks and disdainful attitudes are not instinctive, because they imply a vast amount of acquired knowledge and skill. I admit that they do so, and that perhaps no single one of her movements can be regarded as the outcome of an innately organized brain-path. Yet I maintain that, if she had no maternal instinct, her behavior under the circumstances would have been very different; just as the white rat would not have dragged her young one to the back of the cage, if she were not endowed with a maternal instinct.

These are very simple examples of the kind of knowledge conveyed, when we rightly attribute a particular action to a particular instinct. In reality we imply in so doing all the knowledge that we may have gained by a life-long study of Instinct in general, of the instincts of many animal species and of the human species. We imply also the more special knowledge we may have gained of the particular instinct alleged to be operative in the particular action, a knowledge built up by the study of that instinct in men and animals. Further, we imply any still more special knowledge we may have gained of that particular instinct in that individual by long study of the individual. Take the case of the sex instinct. There can be no doubt that we understand any phase of the sexual behavior of a particular man, say a patient suffering from partial impotence of the mental or functional type, the better, if we have studied Instinct in general and if we have studied the sexual instinct in particular; and that we understand it still better, if we have studied in detail the sexual history of that individual and all that bears upon it. The whole of the success of the modern treatment of the psycho-neuroses testifies to the value of such knowledge. Take a case of a common type. A young man appears in the police court, charged with cutting off the hair of young girls on the street, in the theatre or in other public places. He expresses the greatest contrition and shame, and

asserts that he has vainly struggled against the temptation to commit this offense. And it appears perhaps that he has secreted a dozen or more such trophies during as many years. The action is clearly irrational and in some sense instinctive. Mr. Field would have us leave it at that and send the young man to prison without more ado, in the good old way, while we return to discuss ethical problems of freewill and personal responsibility, well satisfied with our philosophic ignorance.

The mechanistic deniers of instinct will say — It is absurd to attribute this action in any sense to instinct, because there is no evidence that the cutting off of the 'pigtails' of young girls is an innate motor response to the stimulus of the 'pigtail'; there is no evidence that this response is connected with this stimulus by any innate brain-path or neurone-chain; for no new-born infant has ever been observed to react in this way to this 'stimulus.' But, in spite of these puerile objections of the philosopher on the one hand and of the behaviorist on the other, the medical psychologist knows that he has to do with a case of perversion of the sexual instinct and that, by applying judiciously the knowledge that he has of the sexual instinct in general, and by adding to it the knowledge that he may gain of the sexual instinct in the prisoner, he may deliver him from a life of shame and torment and restore him to normal and happy living.

Mr. Field admits the propriety of the conception of mental structure, comprising permanent dispositions which express themselves in activities. For has he not the authority of Aristotle behind him? But he will not allow us to attempt to make use of the conception. But if a disposition (I would not say 'permanent,' for though dispositions endure, they constantly undergo changes of growth, of decay, of differentiation) expresses itself in various ways, may we not hope to learn, by studying these successive expressions, something of its nature that is not wholly revealed on any one of these occasions; which knowledge is then implied and conveyed (to those whose minds are prepared to assimilate it) when a particular activity is attributed to that particular disposition? Mr. Field's position is even more resolutely unprofitable than that of the mechanistic behaviorists; for they are at least prepared to recognize 'reaction patterns' in the nervous system, and to believe that we may acquire some useful knowledge about them.

It is not even true that our knowledge of instinctive dispositions is inferred only from the observation of their expressions in behavior

and in experience. For it is highly probable that instinctive dispositions are Mendelian units; and, if further evidence should establish that view, our knowledge of them would be enriched by all that has been gained through the study of Mendelian inheritance.

A word upon Dr. Lloyd Morgan's remarks on mental dispositions.[33] Following Professor Stout, Aristotle and other writers, I have used the word 'disposition' to denote a fact of mental structure, and I have attached great importance to the drawing of a clear distinction between facts of structure and facts of activity. Lloyd Morgan refuses to accept this usage and insists upon regarding a disposition as something 'within the field of experience,' as of the nature of a felt inclination to certain behavior, an 'attuned preparedness, accompanied by enjoyment.' This seems to me unfortunate. We are seeking a neutral term to denote facts of mental structure, one which will commit us to no theory of the mind-body relation, and we propose to use the word 'disposition.' Lloyd Morgan objects that this involves "a pretty wide departure from popular usage." It does involve such departure, and that is just what we aim at. For popular usage and much of the writing of psychologists perpetuates the confusion between facts of structure and facts of activity. Lloyd Morgan points out that in popular speech the word 'disposition' is used in both senses, and insists that we must therefore perpetuate this confusion and ambiguity when we use the word in psychology. Surely an insufficient reason! The word 'idea' as commonly used affords the best illustration of this ambiguity; it is generally used to denote both thinking in a particular way and the latent capacity to think in that way. That the tendency to such confusion is very strong I know too well; for I have tried in vain to make clear that I desire to use the words 'sentiment' and 'instinct' for facts of structure.[34] But is that

[33] "Instinctive Dispositions," *Scientia*, October, 1920.

[34] Exactly the same problem arises in connection with the usage of the word 'sentiment.' In popular speech it is used to denote both a variety of feelings and also enduring emotional attitudes or fixed tendencies to emotional reaction of a certain kind, in face of certain objects. And it is in the latter sense that I have tried, following Mr. Shand, to specialize it for psychology. That is to say, I have proposed to use the word to denote facts of structure only. That common speech uses it in this sense is clear. Suppose that we see a man seated comfortably in his arm-chair, replete with food, smoking a good cigar and smiling affectionately upon his family circle. It is difficult to imagine him displaying anger or any other harsh and hostile emotion; and if he were questioned he would no doubt admit only the most genial feelings. Yet one who knows him may know that he harbors a strong hatred of a certain distant person and that he is of an irascible disposition. This hatred and this disposition are recognized by common speech as persistent facts of the man's nature, even at the time when they are exerting no influence upon the course of his experience and behavior. Why then should Lloyd Morgan insist that in deference to common usage we must regard disposition as a weakly felt impulse, that "impulse is dis-

a good reason for refusing to attempt to clarify psychological discourse by securing recognition for this all-important distinction? If we wrote of 'neuro-grams' or 'engrams,' or used other such terms, which imply that the structure we have in mind can be adequately described in terms of neurones and synapses, probably neither Professor Lloyd Morgan nor Mr. Field would have objections to raise. Perhaps such description is in principle possible; but we need a term which will commit us to no such speculative dogma; and 'disposition' is the term we propose to use. Instincts, then, or instinctive dispositions are one class of mental dispositions among others; and all psychological study aids in throwing light upon mental 'dispositions'; that is in enriching and refining our knowledge of them.

A word may be said on the attitude towards human instinct revealed by Dr. F. H. Allport.[35] He reports and promises to continue a wholly praiseworthy series of experiments on the social reactions of individuals; but incidentally he disparages the use of the conception of instinct. He admits that "there may well be innate physiological patterns of response . . . embodying fundamental drives"; but he would restrict very narrowly the field of such instincts. "For the data and laws of social psychology we must search in other fields of behavior than that of instinctive response. . . . One observation of a baby's first laugh, or of the early use of language, is worth more than treatises on instinct and emotion." Again — "the time has come to abandon speculations about types of groups, social organizations, self and crowd consciousness, instinct and imitation. When social psychologists focus their attention upon the behavior of the individual under direct and incidental stimulation from the behavior of others, then the most vital questions of the social order will find their solution." On this I would comment as follows. By all means let us have as much as possible of observation and experiment upon the social reactions of babes and adults. But let us be clear that the mere piling up of detailed reports of these will not constitute the science of

position with added emphasis"? And why should we not specialize the word sentiment in that one of its two popular senses for which we have no other word, instead of continuing to use it in the confused ambiguous sense of common speech? I have only recently learnt that R. H. Lotze conceived sentiments in this fashion. On reading for the first time his 'Outlines of Psychology' (Eng. Trans.) I find the following passage: "In like manner must we distinguish the 'Sentiments,' — that is to say, permanent species of mental constitution, which proceed from this, that a definite value is once for all placed upon certain contents of ideas; they are, therefore, — for example, piety or patriotism, — not themselves simple definite feelings, but causes from which the different species of feelings can originate according to the nature of circumstances." (p. 77.)

[35] "Behavior and Experiment in Social Psychology." This Journal, December, 1919.

Social Psychology. The data so provided are merely the raw material of science. They must be co-ordinated in general statements by the aid of hypotheses, if the science is to take shape. Miss Shinn's careful account of her infant niece was an admirable piece of work. But not a thousand, nor yet ten thousand, such books as hers will constitute a social psychology. I have myself devoted a chief part of ten years to the observation, simple and experimental, of my young children, and the results are embodied in my 'Social Psychology.' I would not expect to find readers, if I published the contents of my many note-books as undigested raw material. The problems of social psychology will not 'find their solution' of themselves, no matter how great a mass of detailed observations be accumulated. Social psychology can only be built up from such data by the aid of fruitful hypotheses. And of all the hypotheses that have been tried, that of human instincts remains, in spite of much loose use of it, the most fruitful and the one which we can least afford to reject.

COMMENTS ON SOME RECENT CONTRIBUTIONS TO THE THEORY OF HUMAN INSTINCTS

Dr. W. H. R. Rivers in his 'Instinct and the Unconscious'[36] accepts in the human species an array of instincts which differs little from my list. He conceives their role and function, their relation to the emotions, and their part in the genesis of sentiments and morbid complexes in much the same way as myself. In fact he refers to all this fundamental part of the theory of instinct as an accepted part of 'orthodox psychology.' He makes a number of interesting suggestions towards the development of the theory on this basis. The most novel of these suggestions was first put forward by him at a meeting of the British Psychological Society in an extreme form.[37] In the book he has modified it and toned it down in the light of criticisms made on that occasion. The essence of the suggestion is that instinctive reactions are of the 'protopathic' type, the type, as shown by Dr. Head and himself, of the reactions in which the thalamic centres play a predominant role. I am disposed to believe that there is a certain amount of truth in this view, though I do not think that the 'all or nothing character' can be usefully adopted as the criterion of the instinctive. And in my opinion Dr. Rivers, in his book, still

[36] Cambridge 1920.
[37] See British Journal of Psychology, vol. X. "Instinct and the Unconscious," 1920.

overstates the 'protopathic' affinities of instinctive actions. But I am more concerned to criticise his interesting chapter on 'the danger instincts.'

Rivers follows the not uncommon plan of classifying the human instincts into groups according to the general character of the ends they subserve. This seems to me an undesirable, because somewhat artificial, procedure, which brings us no advantages but rather tends towards confusion. He distinguishes a group of instincts of self-preservation, which he divides into two sub-groups, the appetitive (including those which subserve the function of nutrition) on the one hand, and the danger-instincts on the other. Of this group of danger-instincts he recognizes five members, as follows: flight, aggression, manipulative activity, immobility, collapse. He accepts my generally disputed proposition regarding the relation of emotions to instincts. "Through the work of modern psychologists," he writes, "and especially that of Shand and McDougall, we have come to see the close relation between affect and instinct. Each of the emotions can be regarded as an affective aspect of an instinctive reaction. Thus, fear is especially connected with the instinctive reaction to danger by flight; anger with the reaction to danger or injury by aggression, etc." He speaks of this as the current view; but, though it is gratifying to me to find it so described, I must point out that it is by no means generally accepted. Almost all the recent critics of instinct have taken occasion to comment adversely upon this view of the relation of emotion to instinct, and it is not accepted by Professor Drever who in other respects agrees most nearly with me; nor is it accepted by Mr. Shand, as Rivers erroneously implies. For Shand, the instinct is essentially a motor mechanism; and the unit of the innate constitution which in his system most nearly corresponds to what I have regarded as an instinct is what he calls an emotional disposition. Thus, in Shand's system, what I have called the instinct of flight or escape is called the disposition of the emotion of fear; and the various motor mechanisms through which (in my view) the instinct of escape most readily finds expression in action, such as the mechanisms of running, shrinking, crying aloud, are called by Shand the instincts through which the emotional disposition operates. So much by way of straightening out the relations between these allied views. Flight, then, in Rivers' view, "is probably the earliest and most deeply seated of the various lines of behavior by which animals react to conditions which threaten their existence or their integrity"; and

fear is the 'affective aspect' of this instinctive reaction. So far I am in agreement. But, when Rivers goes on to list aggression as a second danger-instinct, I cannot agree with him. He recognizes anger as the affective aspect of this instinctive reaction; and this instinct is clearly to be identified with what I have called the instinct of pugnacity. Now it is true, as I have pointed out, that, when a frightened creature is thwarted in its efforts to escape; when the fleeing animal or man is brought to bay, fear may give place to anger and aggression. But in this respect the instinct of escape does not differ from all the other instincts. Anger and aggressive behavior are apt to be provoked, both in men and animals, by the thwarting of any conation. Anger and aggression have no special relation to "danger or injury by aggression." To attempt to take away a dog's bone, or to come between a male animal and his female, to interfere rudely with the young of the mammalian mother, these are the surest provocatives of anger and aggression; but the thwarting of the mild impulse of curiosity, or of submission, or of any other impulse or desire, whether on the instinctive or on a more intellectual plane, is equally provocative of anger; though, in general, the anger impulse seems to be provoked more or less strongly in proportion to the strength of the impulse thwarted. Rivers' classification of aggression with 'danger-instincts' is thus an illustration of the drawbacks of such attempts to group the instincts in classes according to their functions.

I feel sure that Rivers' recognition of an instinct of manipulation as one of his 'danger-instincts' is mistaken. Almost every one of the instincts might equally well be called an instinct of manipulation. Curiosity certainly seems to be the root of much of the manipulative activity of children and of monkeys. And every other instinctive impulse, working on the plane of adult human life, may sustain manipulative activity. Rivers speaks of manipulative skill as 'man's most natural response to danger.' But surely this kind of response is the product of much training and discipline. It is true that the man who has spent half a lifetime in dangerous pursuits, such as warfare or big game shooting, in mountain climbing, or in criminal detection, may respond to every danger with well disciplined manipulation of his weapons, natural or artificial; and he may be so inured to danger of particular kinds and so practised in meeting them, that, when the danger suddenly threatens, his whole energy is concentrated upon appropriate skilled action, a concentration which may inhibit almost completely all the natural reactions of fear. But even he,

if he could be examined minutely at such moments, would probably be found to exhibit some slight trace of the symptoms of fear, a slight increase of pulse rate, some change of distribution of the blood stream, some slight increase of adrenalin in the blood. And, if the danger is of an unaccustomed kind, or unusually appalling, even he may show and feel fear with all its natural instinctive symptoms. I would recall Edward Whymper's description of the behavior of his two experienced Alpine guides, when the rope broke during the first descent of the Matterhorn, and four of the party slid over a precipice before the eyes of the remaining three. Whymper displayed manipulative activity of a high order; but it was with the greatest difficulty that he induced his terrified guides to exert the needful manipulative activity. The many soldiers who during the war felt and yielded to an uncontrollable impulse to flee to cover, when shells began to fall about them, exhibited the true instinctive reaction to fearful impressions in all its crude simplicity.

Rivers affirms truly enough that "there seems to be in action [that is, skilled controlled action] a process of suppression of the fear or other affective state." But this is true of all emotion; the resolute exercise of the higher mental functions in the emotion-exciting situation diminishes the intensity of the emotion natural to the occasion. We may interpret the fact physiologically by supposing that the nervous energy which, in the absence of such higher-level activity, would vent itself in the instinctive symptoms and reactions is led off to and utilized in the higher levels of the brain. The fact insisted on by Rivers seems to be merely a special case of the general law of inhibition as the correlative of intense activity of any kind. There remain certain instances in which men have reported absence of fear in situations that seem just such as might have been expected to excite it in the highest degree. One such is that of David Livingstone when mauled by a lion. I do not know how such cases are to be explained. But this one at least cannot be explained by Rivers' principle. For Livingstone was inert and helpless, while the lion stood over him and tore his shoulder with his teeth. The absence of pain on some such occasions presents a similar problem, equally insoluble by Rivers' suggestion. The facts seem to be allied to the panoramic vision of a life-time reported at moments of imminent death by many men. I should be inclined to seek an explanation along the lines suggested above. The situation seems to evoke a very intense intellectual activity, combined with an attitude of complete resignation to the

inevitable. Are not such instances allied to the painless triumphs of the Christian martyrs at the stake?

Rivers' fourth 'danger-instinct' is immobility. "The instinctive reaction by means of immobility has the end of concealing the animal from the danger which threatens it." I agree that this behavior is instinctive, but I cannot agree to regard it as the expression of an instinct distinct from the instinct of escape and fear. I submit that the escape instinct is one that naturally manifests itself in two phases: first, the phase of flight, lasting so long as the creature is in the open; followed by a phase of immobility, as soon as cover is reached. The change of situation, the attainment of cover, brings about a change in the outward expressions of the instinct; just as in instinctive combat, the phase of aggressive approach is succeeded by the phase of 'manipulative activity,' of striking, tearing, biting, which may involve almost every motor mechanism of the nervous system, whether innate or acquired. We see this succession of phases of escape most simply illustrated by the child or woman who, startled by some unfamiliar noise on rising from bed in the night, springs back into bed, pulls the bed clothes over her head, and lies still with thumping heart; or by the ignorant maid-servant who at the first crash of thunder flees to her room and takes refuge under her bed or in a closet.[38]

There is no reason to suppose that the frightened animal or human being that has attained to cover and lies hidden and immobile ceases to feel fear. Many accounts of such experiences by men, women and children forbid any such supposition. When an animal is discovered in such a situation, it may be noticed that its heart is pumping at a great rate, and that it is ready to renew its flight at the instant its cover is withdrawn.

Rivers' fifth 'danger-instinct' is collapse with tremor. He admits that this reaction is 'accompanied by that excess of fear we call terror.' And he rightly, I think, ascribes collapse to conflict of impulses. The tremor which was so distressing, so frequent and so long continued a result of fearful impressions made on soldiers in the war seemed to be essentially the expression of a conflict of tendencies, a

[38] For the deniers of instinct such actions are not instinctive, because the motor mechanisms involved in running upstairs and in jumping into the bed or crawling beneath it, or opening the door of the closet are not innate; for stairs and beds and doors do not exist in nature; and in doing these things, the frightened girl is making use of acquired mechanisms. How they propose to explain such behavior, I do not understand. I suppose they would have us assume that, on the first occasion of hearing a crash of thunder, the girl happened in the course of random movements to crawl under the bed; or that the sound rendered her negatively phototropic for the time being; and that the pleasure of being under the bed (or its neural correlate) then 'stamped in' this mode of reaction.

conflict between the impulse of fear and the counteracting efforts of control. It is when we try to control our fear that we tremble; and it is noteworthy that we tremble also, when we try to control fierce anger or fierce lust and even, perhaps, fierce hunger or curiosity. In the soldiers in whom the tremor became a chronic symptom, the conflict was continued subconsciously; and in many cases ceased as soon as the conflict was resolved. The most obstinate tremor I ever saw was the leading symptom in a very fine soldier who had been through many terrible experiences at the front and had earned promotion and distinction. He was consumed with eagerness to return to the front, with patriotic anxiety, and a fierce anger against the enemy; but he could not stand in the presence of an officer without violent tremor of all limbs, an inability which caused him the most acute distress and mortification. My sympathies were deeply enlisted. I admired the man and pitied him profoundly. I exerted myself to the utmost to solve his problem during many weeks that he remained under my care. He told me of many terrible adventures and of most painful domestic affairs; and I explored his dreams and his past life, without avail; until at last he reluctantly confessed that in a moment of fierce vengeance he had thrust his bayonet through a wounded German. Only after a cool discussion of this incident had restored it to its due proportions in his mind, did the exaggerated horror and repulsion attaching to it pass away and the tremor cease. This was the conflict that maintained the tremor, a conflict between the horror with which he remembered this deed and the rest of his highly moral nature. This is but one of many similar cases that came under my care during the war.

Conflict, then, is the condition of the tremor and collapse which are apt to supervene, when escape is morally or physically impossible. And it is not necessary to postulate, with Rivers, an instinct of collapse in order to account for the facts.

Rivers accepts as established in 'orthodox psychology' my conception of the sentiment and protests against the tendency, introduced by Dr. Bernard Hart and followed by Mr. A. G. Tarsley,[39] to extend the denotation and narrow the connotation of the term 'complex' until it becomes synonymous with 'sentiment.' I am glad to endorse this protest; for, as Rivers says, "There is no hard-and-fast line between the healthy and the morbid, and it is possible, if not probable, that the complex will in some cases shade off into the senti-

[39] In his valuable treatise, 'The New Psychology.'

ment, but I believe it is useful that pathology shall have its own terms and concepts. I believe that it will be best to reserve the term 'complex' for products which partake, in some degree at any rate, of a morbid quality [i. e. of some degree of repression or dissociation] and that nothing but confusion can result from the inclusion in one category of definitely pathological processes and such absolutely normal and necessary processes as the sentiments." But, while endorsing this protest, I would add a protest against the description of either the morbid complex or the healthy sentiment as a process. Both the complex and the sentiment are facts of structure, not facts of activity; and we shall not get rid of confusion, until we learn to observe this distinction and cease to describe facts of structure as processes.

In his very interesting and original chapter on suggestion and hypnosis, Rivers attributes to me the view that suggestion, sympathy and imitation are three modes in which the gregarious instinct operates; and, adopting this view, he goes on to make his own contributions to the subject. In attributing his view to me Rivers is in error. I did not propose it in my Social Psychology; rather I described suggestion, sympathy and imitation as pseudo-instinctive, meaning that they have so nearly the appearance of instinctive processes that many writers have been led to attribute them to as many distinct instincts or to one. I went carefully into all three processes, distinguishing their varieties, and propounding what seemed, and still seem to me, the true interpretations of each. Especially I took the view that in suggestion, the curative force at work is generally, if not always, that of the instinct of submission. In an article published in 1920[*] I have adduced further evidence in support of this view. The view which Rivers attributes to me is rather the view of Mr. Trotter, who, in his brilliant but loosely thought treatise on the herd-instinct, has assumed without question that all these processes of imitation, suggestion and sympathy, as well as many others, which are dependent upon the operation of highly elaborated and refined sentiments, can be adequately explained by pronouncing the blessed word 'herd-instinct.' Trotter's procedure in fact gives some justification to those critics who accuse 'instinct-psychologists' of making of Instinct a 'magic potency,' a universal solvent, and an 'open sesame.'

Among those who recognize instincts in man, there is still much division of opinion as to the relation of instinct to emotion. In my

[*] Journ. of Neurology and Psycho-pathology, Vol. I, pt. 1.

'Social Psychology' I proposed a view of this relation which seemed to me to have been very nearly formulated by others (especially James and Dr. Rutgers Marshal) and to be so obviously true that, when once formulated in general terms, it would be at once accepted as a truism. My formulation was that instinctive activity is naturally accompanied by some degree of a general felt excitement; that this felt excitement, accompanying the operation of any instinct, is specific in quality to that instinct; that these qualities of felt excitement, naturally accompanying instinctive strivings, are what may properly be called the primary emotions; that the felt excitement is apt to be strong and of highly specific quality in the operations of some instincts, less strong and of less specific quality in other cases; that, whether or no we accept literally the James-Lange theory of emotions, these specific qualities of excitement are correlated closely with the visceral adjustments which are integral features of the instinctive reactions, and which in the main are adjustments serving to render the instinctive strivings more efficient.

Rivers, as we have seen, seems to accept this as the view of 'orthodox psychologists'; and it is true that it has been embodied in several recent text-books. But it is not accepted by Ward, Thorndike, Warren, Shand, Watson, Titchener, Stout, Woodworth, Lloyd Morgan or Drever, all of whom have discussed the emotions or instincts in authoritative books published or revised since my formulation was proposed; and it is, of course, rejected explicitly or implicitly by all the recent deniers of the instincts of man. And it has not, so far as I am aware, been accepted by any continental psychologist.

It is then hardly true to say that this view is generally accepted. It is true that some of the authors mentioned above have written sentences which seem to imply the view; as when Stout writes: "The combative tendency is the pre-disposing cause of that emotional seizure we call anger"; or Woodworth writes: "The close connection of emotion and instinct is fully as important to notice as the distinction between them. Several of the primary emotions are attached to specific instincts." It is true also that the authors of most of the recent books on psychology acknowledge some relation, in treating of emotion and instinct in successive chapters or even in the same chapter. The principal grounds of rejection offered are two. The first may be stated in Woodworth's words: "It has been suggested accordingly, that each primary emotion is simply the 'affective' phase of an instinct, and that every instinct has its own peculiar

emotion. This is a very attractive idea, but up to the present it has not been worked out satisfactorily. Some instincts, such as that of walking, seem to have no specific emotion attached to them. Others, like anger and fear, resemble each other very closely as organic states, though differing as impulses. The really distinct emotions (not impulses) are much fewer than the instincts."[41] Here it is clear that the objection to my view arises from the identification of instincts with motor mechanisms; a fallacy which I have sufficiently discussed above. But it is perhaps worth while to notice Professor Watson's handling of this question.[42] "A serviceable way to mark off an *emotional* reaction from an *instinctive* reaction is to include in the formulation of emotion a factor which may be stated as follows: The shock of an emotional stimulus throws the organism for the moment at least into a chaotic state. When in the first shock of an emotional state, the subject makes few adjustments to objects in his environment. The subject in an instinctive act usually does something. . . . When the adjustments called out by the stimulus are internal and confined to the subject's body, we have emotion, for example, blushing; when the stimulus leads to adjustment of the organism as a whole to objects, we have instincts."[43]

Watson admits only three "emotional reactions as belonging to the original and fundamental nature of man: fear, rage, and love." — He is "of the opinion that most of the asserted emotions are of the consolidated type (that is, emotion plus instinct, plus habit) or emotional attitudes." This consolidation is effected in the course of individual development. "Possibly the activities we see in 'anger' or its more active attitude, 'fighting,' best illustrate the points to be presented. . . . In the human race certainly the exciting stimulus is usually one which hampers, jostles, crowds or constrains the individual — the stimulus to rage. The instinctive factors are striking out with the arms and hands, grasping, running toward the object, probably biting it, the while unfleshing the lips. Defensive movements also occur of the instinctive kind. The habit factors express themselves in the scientific form 'of attack and defense.' . . . The whole group is integrated, the part reactions work together. . . . In the above, rage predominated as the emotional constituent, the hereditary attack and defense movements as the instinct,

[41] "Psychology," p. 134.
[42] In his 'Psychology from the Standpoint of a Behaviorist.'
[43] Op. cit., p. 197.

and the trained activities as the habitual. Probably all other forms of emotion . . . show the types of combination shown above." (P. 217.)

"In our discussion of emotion we brought out the fact that there is no sharp line of separation between emotion and instinct. Both are hereditary modes of action. . . . Probably every stimulus which leads to a definite instinctive act leads at the same time to some change in emotional tension. It seems easier to believe that emotion can occur without overt instinctive response than that instinctive action can occur without at the same time arousing emotional activity. We should define instinct as an hereditary pattern reaction, the separate elements of which are movements principally of the striped muscles. It might otherwise be expressed as a combination of explicit congenital responses unfolding serially under appropriate stimulation." (P. 231.)

"Although we are not prepared to insist upon it we are inclined to believe that man is originally endowed with various kinds of positive reaction tendencies, but with few negative reaction tendencies. The few negative tendencies are to be seen in the 'avoidance' of loud-sounding objects, the struggle to escape from those which excite rage and fear generally, and the guarding or fending movements used in connection with any object or person that tends to injure the subject's own tissue. . . . Every object either by virtue of the original constitution of the individual or through associative connections of one kind or another . . . calls out, in addition to the ordinary overt or delayed response in the striped musculature, a definite and complex group of reflex activity in the erogenous zones. When thus stimulated this area may, according to the way in which it has been excited, arouse two fundamental kinds of impulses, (1) a group connected with tumescence. . . . This group, if functioning alone, would lead to the positive seeking movements, and ultimately to the unfolding of the instinctive mechanism of the act of reproduction. (2) A group connected with detumescence inhibition and relaxation of other muscular tissue and with inhibition of secretions. These impulses gaining the motor centres would, if no inhibitory factor were present, release the movements of avoidance." "This theory has been objected to on the ground that it seems unduly to emphasize the instinctive factors connected with love. It in a way maintains that action is determined and evaluated by such factors." Watson then goes on to discuss, "some asserted instincts in man."

The following passages are noteworthy in the present connection. "Fighting is listed as one of the principal instinctive tendencies. We have already in part discussed this under emotions. Where the overt, explicit activity is emphasized, it is properly classed as an instinct, and an all-important one." He gets rid of the parental instinct very summarily. "We have observed the nursing, handling, bathing, etc., of the first baby of a good many mothers. Certainly there are no new ready-made activities appearing except nursing. . . . The instinctive factors are practically *nil*. The emotional activity of both parents may be intense, but this is often the result of many factors. . . . There is a stronger and stronger tendency among educated women to break away from the sentimental drivel connected with the rearing of the child and to make a scientific problem of it. Just to the extent to which convention permits it, rationalization occurs. This is a strong argument that maternal behavior is not mainly instinctive." After all this fine confused feeding, Watson winds up on the following note. "The fact of the matter seems to be that in most cases there is no need of detailed analysis of these attitudes. Those that we have cited and many others function as wholes in the daily lives of all individuals. They are as potent and real as if they were inborn and began to function in earliest infancy with all the completeness they exhibit in adult life." The sex instinct is dealt with as follows, — "We have already discussed some of the implicit factors in connection with the emotion of *love*, and indicated there how attachments (conditioned reflexes) might grow up to persons and objects that stimulate the erogenous zones of the child. . . . We are dealing here, though, with a primitive order of habits and not with instincts. There seems to be no original tendency to approach the sex organs with the hands." But "Undoubtedly there are a large number of purely instinctive responses connected with those organs. The sex instinct as a whole has very many ramifications. Habits of the most varied kinds are built upon and around it." Finally, — "We cannot help but feel that there are enough instinctive leanings present in early youth to properly shape any child's future activities. . . . Individuality seems in some way to depend upon man's original tendencies, not upon the presence of the completed pattern type of instincts, since these do not exist in any large number, but apparently upon factors which, when taken singly, are difficult to detect, but which when taken together are most important. There is not much experimental evidence for this con-

clusion, but there is a great deal of common-sense data." "The principal role of all instinctive activity, neglecting the vegetative and the procreative, . . . is to initiate the process of learning."

Surely a lame conclusion, almost a capitulation, after a half-hearted effort to divorce instinct from emotion and reduce it to the type of reflex response to stimulus. It is no wonder that Watson's younger disciples, the devotees of the stimulus-response formula, are showing a decided tendency to throw him overboard. For, after all his wobbling utterances, Watson arrives at a common-sense position almost indistinguishable from my own. The truth seems to be that he has too much knowledge of human and of animal nature to be a consistent stimulus-response behaviorist. Shall I add also that he has too much 'common-sense'? It would be tedious to criticize in detail the utterances I have cited. They criticize themselves. I will only remark that Watson, beginning his discussion with extreme behaviorism and ending it with 'common-sense,' would seem to aim at reconciling his beginning with his end. The task is an impossible one.[4]

A different objection to my view of the relation of the primary emotions to instincts is brought forward by Professor Drever, who insists on a doctrine which has been advocated by Professor Dewey and others. Curiously enough the view adopted by him is the converse of that stated by Watson and developed by Professor Kantor.

[4] The one serious feature of behaviorism is its power of securing the adhesion of young students. This, I think, is due to the fact that it immensely simplifies his tasks, by authorizing him to ignore most of the problems of psychology. Behaviorism seems to me to have arisen as a reaction against, or rather a natural development of, what may perhaps be called Titchenerism. One often hears discussions in which it seems to be tacitly assumed that the student of human nature has to make his choice between two alternatives, behaviorism and Titchenerism. I venture to suggest that there remains a third alternative, namely psychology. If I were asked to define Titchenerism in a few words, I would say — it is the abortive psychology which stultifies itself by refusing to attempt to deal with 'meaning and motive.' In his 'Beginners' Psychology,' Professor Titchener demonstrates very clearly the reality of 'meaning' as a part of experience (pp. 26–29); but insists that his 'Science does not deal with value, or meaning, or uses'; that it is not concerned with motives; that "mental processes do not intrinsically mean, that meaning is not a constituent part of their nature." Yet "meaning is of very great practical importance; we communicate meanings, we apprehend meanings, we act upon meanings." But the 'psychologist' must not allow himself to be interested in these facts; for — "the psychologist has nothing in the world to do with knowledge or awareness" (p. 324) and is not concerned with human nature (p. 3). Titchenerism, then, excludes from the province of psychology all knowing, all awareness, all 'meaning,' all motives, leaving only meaningless clusters of sensations and images; behaviorism, rightly seeing that these meaningless clusters are of no help to it in the interpretation of human behavior, throws them out of the window after the 'meanings.' Thus Titchenerism and behaviorism are two stages of the same process, by which the science of human nature is degraded to an arid waste of 'stimuli' and shadowy meaningless 'reaction patterns,' a world of 'moving shadow shapes that come and go,' empty of all knowledge, value, motive and meaning.

Watson regards instinct and emotion as distinct in origin and function and more or less incompatible; and emotion checks or prevents action. According to Drever, on the other hand, emotion arises in consequence of some check to instinctive action. He holds that all instinctive action is accompanied by 'interest.' "The alternative hypothesis to McDougall's is that the affective element in instinct-experience becomes emotion, only when action in satisfaction of the interest is suspended or checked, when . . . interest passes into 'tension.' If impulse immediately realizes itself in the appropriate action towards the situation, then there is no emotion in any strict sense of emotion."

Again Drever writes: "We seem then compelled to take the view that the instinct-emotion is not an invariable accompaniment of instinctive activity, but that the instinct-interest is, that the instinct-emotion is due to what we previously called 'tension,' that is, in the ordinary case, to arrest of the impulse, to the denying of immediate satisfaction to the interest."

He suggests that animals, being provided with innate motor mechanisms through which their instinctive impulses readily find appropriate expression in action, experience little emotion; the emotion being less in proportion to the perfection and adequacy of these motor-mechanisms; whereas in man, these mechanisms being for the most part vestigial and imperfect, a checking of instinctive impulses occurs during a period in which a suitable mode of action for the pursuit of the natural end is intelligently selected; and in this period the emotion arises. There is, on the face of it, something plausible in this view. But I cannot see that it is supported by direct appeal to our experience. Surely a sudden injury or insult, a sudden threat, a pistol suddenly levelled, a yawning chasm suddenly revealed, a sudden cry of terror, a sudden noise of any unknown origin breaking through the stillness and solitude of night, a single admiring glance, the entrance of a commanding personality, the child's cry of distress, surely all these and many other impressions are apt to evoke in us an attitude which immediately, on the first moment of perception of the object, is emotionally toned. We cannot reject the evidence of such experiences, because some animals seem to carry on prolonged trains of instinctive activity with no signs of emotion that we can confidently interpret. Yet even in animals the appropriate signs of emotional excitement commonly accompany the excitement of instinctive activity. The mating pigeon, the hunting dog, the shying horse, the hen-bird or the mammalian mother whose young utter cries of

distress, all these display immediately signs which the popular mind interprets unhesitatingly as emotion; and even the wasp and the bee are quick to evince their changes of instinctive activity by outward signs of emotion. Just as a tactful and efficient treatment of human beings is only possible to him who delicately appreciates the signs of emotions in human beings and interprets them as indicators of tendencies to action; so also the successful handling of animals depends upon an exactly similar appreciation and interpretation of the symptoms of emotion as signs of instinctive excitement. A bee-keeper, a horse-trainer, a lion-tamer, a dog-owner, who should ignore this relation of the primary emotions to the instincts, influenced whether by the theory of Drever and Dewey, or by that of Watson and Kantor, would have little success and a most uncomfortable time. Let us admit that popular practice has, in this matter as in many others, long embodied a psychological truth which it is mere pedantry to ignore or deny.

Drever himself writes: "Though we cannot accept McDougall's view, that the primary emotion, as such, is merely the affective element in instinct-experience, we are in entire agreement with him on what appear to be the main points. There are certain instincts of vast importance in both human and animal life, of which an emotion is, under normal conditions, one of the most prominent characteristics. At the same time there are, it is true, in addition, minor instincts, characterizing the behavior of the young child, where the interest is not usually of the emotional type. But the important point is that the great instincts of human nature have all their accompanying and typical emotions. We must, therefore, in the case of man and the higher animals, distinguish between instincts, which approximate the 'pure' type, and the great instincts which are characteristically emotional."[45] The difference between us seems small. Drever recognizes an affective element or aspect of all instinctive action, but refuses to call it emotion. His distinction seems rather fine-drawn. His divergence from my view on this question seems to be due chiefly to his attaching a narrow connotation to the word 'affective.' He tells us that, — "Biologically the function of emotion is apparently to reinforce impulse and interest." This implies that emotion is in itself, apart from instinctive impulse, a motive power or conative energy, one which on occasion supervenes upon and reinforces instinctive striving. That is a doctrine which

[45] 'Instinct in Man,' p. 161.

seems to me to have nothing in its favor and which involves great difficulties if we try to conceive it in terms of phylogeny.

Another feature of Drever's treatment which I cannot accept is his setting apart of a certain group of instincts as appetites, especially the nutritive and reproductive instincts. The ground of this distinction is the prominence of the chemical or other internal bodily factors in these instinctive activities. But the difference here is purely one of degree. It is probable that the operation of every instinct has its conditioning factors within the visceral zone; and that these are of greater importance than has commonly been recognized; though such writers as Dr. Berman[46] exaggerate in assigning to them an almost exclusive and dominant role. Mr. Wallace Craig has well shown the role of appetite in various instinctive activities of animals. If we were to accept the distinction, we should find much difficulty in distinguishing between appetites and instincts. Shall we refuse to call the migration of birds instinctive, or the sexual impulse of men and animals, because appetite is clearly involved? In this matter, it seems to me, Drever has been unduly influenced by a pious deference to Dugald Stewart and others of his eminent Scottish predecessors; whose interesting treatment of the active side of human nature has been too much neglected by the recent fashion.

In conclusion, I would insist that those who deny instincts to the human species are not, as some of the younger of them seem to imagine, boldly striking out a new line. They are true reactionaries. They would have us revert to the *tabula rasa* of Locke, the vibratiuncule of Hartley, and the unmitigated associationism of James Mill. In so doing they would deprive us of all possibility of building up any intelligible account of character and volition. To those psychologists who are convinced that human nature has instinctive bases which become elaborated into what we call character, I would suggest that the time is ripe for the discussion of this process of organization. In my 'Social Psychology' I have offered an account of the process which for the first time brings volition into intelligible relation with lower simpler forms of action, exhibiting it as the outcome of the organization of the instinctive bases in a hierarchy of sentiments. This, the most important contribution of my book to psychological theory, to which my account of the instincts and emotions is but the propaedeutic, has been ignored by all but a very few. I invite the attention of the critics to it. To those who cannot accept the view

[46] "The Glands regulating Personality," New York 1921.

that human volition is mechanical reflex response to a 'stimulus,' I would point out that the alternatives are either some such account as I have offered or the conception of volition as a mysterious 'fiat of the will,' a bolt from the blue, an irruption of some force of an order *sui generis* among the orderly processes of nature.

Lastly, I would insist that the issue of this controversy is a matter of the largest practical importance. If the deniers of instinct should gain the day, that would mean a return to the social philosophy of the mid-nineteenth century, hedonistic utilitarianism, with its belief in the absence of all significant differences between individuals and between the races of mankind, and the belief in the limitless perfectibility of all mankind by the processes of education alone. To some of us it seems that much harm has been wrought by these dogmas, and that the Western world is just now beginning to find a better way than that which has led it to the brink of irretrievable disaster. I, for one, am convinced that social health and national prosperity and stability require that we shall fully recognize the complexities of human nature and the large differences of innate constitution between one man and another.

THE VALUE FOR SOCIAL PSYCHOLOGY OF THE CONCEPT OF INSTINCT[1]

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IN view of a recent tendency among certain psychologists to deny the existence of human instincts in any proper sense of the term, I propose to attempt a brief review of the instinct theory, with special reference to its meaning and value for social psychology. My own position may be indicated at the outset by a quotation from Professor Dewey's address given before the American Psychological Association in New York, December, 1916. In this address Professor Dewey traced some of the chief steps in the development of social psychology, as follows: "It would be ungrateful to engage in any discussion of the past and future of social psychology without recalling a few rich pages of the *Principles* [James' *Principles of Psychology*] which are devoted to the social self, and, in the discussion of instincts, to the native reactions of human beings in the presence of one another. . . . I hope I may find general agreement in pointing to the work of McDougall and Thorndike respectively as indicative of the next great force [following the work of Tarde] in social psychology, together with such writings as those, upon the social side, of Graham Wallas. . . . The problem was presented . . . as the problem of the relationship of original or native activities to acquired capacities and habits. *Henceforth our social psychology is placed upon the sure ground of observation of instinctive behavior.*" (*Psychological Review*, Vol. 24, pp. 266–68. Italics mine.)

Professor Dewey's prophecy as stated in the last sentence quoted above is being fulfilled so far as the main line of emphasis in social psychology is concerned. However, the instinct theory is being subjected to criticisms of which account must be taken. There are two principal types of opposition to the instinct theory. In the first place, for the purpose of discrediting the instincts an alleged analogy has been pointed out between instinct psychology and the discarded faculty psychology. If this analogy were exact, it would be

[1] [Editorial Note: The present article will be followed in a short time by another in which Dr. Wells promises to develop his theory of the effect of the environmental factors in inherited traits by bringing forth additional biological evidence.]

fatal to the cause of instinct. In the second place, the claim has been made that, in the human animal at least, all behavior which, under the influence of such psychologists as James and McDougall, has been commonly called instinctive, is in reality behavior of the acquired type and hence a matter of habit rather than of instinct.

Mr. Field has made an analysis ("Faculty Psychology and Instinct Psychology," *Mind*, N. S. Vol. 30, pp. 257–70) of the instinct problem in the effort to convict instinct psychology of "the Fallacy of Faculty Psychology of attempting to describe what we know in terms of what we cannot know" (*ibid.*, p. 270). Dr. Allport speaks of this fallacy, saying that text-books of social psychology still cling to the faculty psychology in their acceptance of social instincts (This *Journal*, December, 1919, p. 297). Mr. Field distinguishes between instinct and the instincts. He accepts the notion of instinct, defined "as something in our innate mental structure of which all that we can say is that by virtue of it a person or an animal performs certain actions without previous experience and without foresight of the end" (*ibid.*, p. 259). He admits that "to say . . . that an action is instinctive or due to instinct gives us valuable information" (*ibid.*). But the Fallacy of Faculty Psychology is committed, he insists, as soon as we go beyond instinct and begin to speak of particular instincts. "What information does it convey to us," he asks, "when we are told that a certain action is due not only to instinct but to some particular instinct?" (*Ibid.*) As will be shown more fully below, however, there is a definite explanatory value in the concepts of the special instincts. To ascribe a person's responses in a given instance to the particular instinct of pugnacity, for example, is to say more than that he fights because he fights: it is to say that the person's present response is due to the existence in his nervous system of synaptical connections which are inherited; and it is further to explain in part why man at the present time possesses these inherited synaptical connections. It says by implication that the mutations resulting in the structures underlying the fighting instinct had survival value during probably millions of years of ancestral life, human and prehuman. Man's present response is explained in this case by a description of one of the prominent aspects of remote ancestral life. We are the "heirs of all the ages" in respect to this instinct just as in respect to other specific instincts. One can understand present human behavior only if one constantly looks beneath the surface appearance of responses acquired through the educative influences of civilized

society and sees the ever-present background of behavior characteristic of man's savage and animal ancestry.

The second criticism of the instinct theory, as I have indicated, is the claim that the responses commonly attributed to instincts are really acquired responses, and therefore habits rather than instincts. Thus Dr. Allport says, "The 'instinct fallacy' errs in injecting social experience and habit into the germ-plasm" (*Psych. Bulletin*, Vol. 17, p. 87). Mr. Kuo says, "In the present paper we attempt to deny not only the classification of instincts, but their very existence" (*Jour. of Philos.*, Vol. 18, p. 648, note). Mr. Ayres, speaking of human instincts, says, "There is nothing of the sort in human behavior" (*ibid.*, p. 564). Professor Kantor affirms: "Human instincts . . . in the adult individual are completely absent. . . . Mature persons possess no instincts" (*Psych. Rev.* Vol. 27, pp. 52, 56). And Mr. Bernard says: "The most cursory analysis of the origin of the action-patterns involved in such so-called instincts as the parental instinct, reproductive instinct, fighting instinct, instinct of self-preservation, the gregarious instinct, and the like will show that by far the majority of the action content is acquired" (*ibid.*, Vol. 28, p. 102).

The last two psychologists cited, however, do not deny completely the existence of human instincts. Thus Mr. Bernard says: "The actual instincts are at once much simpler and more elemental and much more numerous than those set forth in the classifications of such writers as McDougall, Thorndike, and other psychologists. There are probably hundreds or even thousands . . . of these inherited mechanisms" (*ibid.*, p. 109). Professor Kantor's position is not unlike Mr. Bernard's on this point, for Professor Kantor recognizes what he calls "instinctive behavior," that is, acquired complex action-patterns developed from "the acts which are properly called instincts" (*ibid.*, Vol. 27, p. 50). What Mr. Bernard and Professor Kantor here refer to as instincts are what would ordinarily be called reflexes rather than instincts, however. In fact, Mr. Bernard admits that he includes reflexes among instincts. Some psychologists, however, as has been shown, deny completely the existence of even the simplest human instincts, apparently believing that no synaptical connections can be inherited.

Both those who deny the existence of human instincts outright and those who accept them in the sense in which Bernard and Kantor accept them, would reject entirely such a position as that of Professor

Hunter when, though giving due recognition to habit-formation, he finds in addition a place for a limited number of complex human instincts which arise wholly through heredity, appearing either at birth or, as is the more usual case, at some time after birth. Professor Hunter admits the fact of modification of instinct by habit, not only after, but often before, the appearance of the instinct; but he denies that all complex action-patterns are habits. Thus he says that in many cases "certain habits or customs have been fixed upon the individual before the normal time for the instinct to appear. Therefore when the instinct manifests itself, it does so from the very beginning in modified form. . . . The modifications of instinctive performance are not all variations . . . produced after the instinct first appears. . . . Other modifications occur because of influences at work before the instinct makes its initial appearance" (*ibid.*, Vol. 27, pp. 252, 255). Such is the position which I would maintain, namely, that over and above habits, due solely to environmental conditions, there are instincts, which are inherited action-patterns.

I would define instinct as Watson does, calling it "an hereditary pattern reaction, the separate elements of which are movements principally of the striped muscles" (*Psychology*, p. 231). Watson admits that there is no sharp line of separation between instinct and emotion, though in the definition of emotion he lays special though not exclusive emphasis upon the visceral and glandular systems involved (*ibid.*, p. 195), and in instinct he places special but not exclusive emphasis on responses of striped muscles. Since emotions, considered in their physical aspect, as well as instincts are hereditary *reaction*-patterns, and especially since the visceral responses involved in emotion constitute an important source of internal stimulation for definitely instinctive responses involving the skeletal muscles, as in the case, for example, of fear, anger, and the sexual emotion, it certainly does not seem feasible to attempt too sharp a division between instinct and emotion. When one compares Dr. Cannon's adrenal theory of the emotions with the view of instinct which ascribes to instinct the chief motivating power in human behavior, as, for instance, in McDougall's theory, one is prompted to ask whether this instinct theory may not find its correct explanation partly in the adrenal theory of the emotions. A great amount of energy for human achievement is supplied during emotional stress through the effect of adrenalin in liberating sugar from the liver, neutralizing fatigue products in the muscles, and increasing the blood pressure. At any rate Dr. Cannon

has contributed evidence that emotion and instinct cannot profitably be considered separately.[2]

Much of the opposition to the instinct theory arises from the belief among some psychologists that by instinct is meant some mysterious force inaccessible to scientific explanation. The position taken by Mr. Jacques Loeb, however, shows that it is possible for a mechanistic biologist, without recourse to non-scientific principles, to conceive of the existence of instincts as complex as the food instinct, the sex instinct, the parental instinct, locomotion, gregariousness, and even the instinct of workmanship, all of which he mentions.[3] Loeb accepts such hereditary action-patterns as facts, and says that the physico-chemical analysis of them is only a question of time. Regarding the hereditary aspect of instinct he says: "The analysis of the instincts given in the previous chapter places us in a position to answer the question as to how they can be transmitted through the egg. . . . The form and instincts of the full-grown animal are only the resultant of a few simple elements which can readily be transmitted through the egg" (*Physiology of the Brain*, pp. 201, 202).

Much of the confusion regarding the question of the inheritance of instincts arises from a failure to get clear concepts and to use precise terms in discussing the mechanism of heredity. The inheritance of so-called characters, or characteristics, is determined not by germinal factors alone, but by these together with environmental conditions that are normally present during at least a part of the time of individual growth. It is the factors in the germ-plasm, which Weismann called determinants and which Johannsen calls genes, that are transmitted from generation to generation. Characters as such are *never transmitted*, they are *all* "acquired" anew during the lifetime of the individual. But some characters we call hereditary, namely, those which are "acquired" as a result of germinal factors and constant environmental conditions. The environment, so far as separate parts of the organism are concerned, may be either external or internal to the organism as a whole. Now action-patterns which are called instincts, just like other hereditary characters, are inherited because of the two sets of conditions, namely, the transmission of germinal factors and the constancy of certain environmental stimuli during

[2] See W. B. Cannon, *Bodily Changes in Pain, Hunger, Fear and Rage*, especially pp. 188ff.

[3] See *The Mechanistic Conception of Life*, pp. 30, 31; *The Physiology of the Brain*, pp. 194, 197, 242; *Forced Movements, Tropisms, and Animal Conduct*, Ch. 18.

the development of the individual. The environmental stimuli required in co-operation with the germinal factors are to a large extent internal in the case of the instincts. As Professor Goodrich said in his presidential address before the British Association for the Advancement of Science, Edinburgh, September, 1921: "Instinctive behavior is carried out by a mechanism developed under the influence of stimuli, chiefly internal, which are constantly present in the normal environmental conditions. . . . Hence [it] is inherited" (*Science*, Vol. 54, p. 537).[4]

We should keep clearly in mind that it is only determinants (now more frequently called determiners), not characters, which are transmitted in the germ-plasm, and that *all* characters are "acquired" during the growth of the individual; though some of these characters are determined by germinal factors (plus environmental stimuli, external or internal). At the end of fertilization, when the transmission of germinal factors has already taken place, there is not present a single character. But none of those who object to calling instincts inherited, since they are "acquired" during individual growth, object to calling hair- or eye-color, for example, hereditary, although the "acquisition" of such characters during the development of the individual is obvious. The chief error in the view of many psychologists who deny that there are inherited action-patterns rests upon a failure to observe that not only all action-patterns, but *all* structural characters whatsoever, are "acquired" in the sense that none of them, since they are somatic, not germinal, structures, are present in the germ-plasm at the end of fertilization. It is true that all racial instincts are "learned," in one sense of the term, by the individual during pre- or post-natal development, but so are all other hereditary characters "learned," or "acquired," in a similar manner.

There is little doubt that many action-patterns involving the autonomic nervous system and the unstriped muscles are inherited. Thus what are commonly called emotions, such as fear, anger, the sexual emotion, etc., when considered in their physical aspect are clearly hereditary action-patterns. But, admitting this, one must admit the further fact that the visceral and glandular responses which constitute the physical side of the emotions are themselves internal stimuli, which have been operative from the time of primeval savagery,

[4] Professor Goodrich's article, "Some Problems in Evolution, pp. 529–538, contains a valuable discussion of problems of heredity. See also Babcock and Clausen, *Genetics in Relation to Agriculture* (New York, 1918), pp. 20ff.

and before, down to the present, making possible the inheritance of action-patterns which involve the skeletal muscles and which are called instincts in the strict sense of the term. The visceral and glandular responses involved in the emotions have been constant in the midst of changing external environmental conditions; and this constancy of internal environmental stimuli has co-operated with germinal factors in producing among individuals in civilized society *some*, at least, of the same hereditary responses of skeletal muscles as those which characterized the instincts of pugnacity, flight (or concealment), etc., in the life of our remote ancestors.

Moreover, many of the external environmental stimuli have existed in ancestral life down to the present time in unchanged form, thus making possible the inheritance of action-patterns dependent in part on external stimuli. James, McDougall, and others have pointed out the chief stimuli that call forth the instinct-emotion of fear, namely, strange objects, intense stimuli such as loud noises, etc. Now such external stimuli are constant factors of any conceivable environment, savage or civilized. Watson and McDougall have singled out interference with one's activities, the "hampering of the infant's movements" (Watson, *op. cit.*, p. 200), the "opposition to the free exercise of any impulse" (McDougall, *Introduction to Social Psychology*, 5th edition, p. 59), as the constant external environmental condition which arouses the instinct-emotion of anger. The presence of inferiors, a situation where one is in some respect superior to the group (McDougall, *op. cit.*, p. 64), is the constant external environmental factor in the case of the instinct of self-assertion. The presence in groups of others of the same species has been a constant external environmental factor in the case of the instinct of gregariousness. Thus one might go on for other instincts, such as those of self-abasement, of curiosity, the parental instinct, the sexual instinct, etc., and might point out ever-present external environmental stimuli for each of them.

For convenience, and in order to accord with the most common usage among psychologists of the terms "acquired" and "hereditary," we may continue to apply simply the term "hereditary" to those characters the "acquisition" of which during the individual's development is inevitable from the fact that it is dependent both on determiners transmitted through the germ-plasm and on constant environmental conditions; and we may apply the term "acquired" to those characters which are not inevitable since they may or may not appear

in individual development inasmuch as their appearance depends on environmental conditions alone, and on environmental conditions which are not constant. Thus, conforming to the common though not the strict present-day scientific usage of the terms "acquired" and "inherited," we may say that habits are acquired while instincts are inherited. Instincts are all "acquired," but only in the sense in which all hereditary characters whatsoever are "acquired."

Those who assert that there are no human instincts properly so called, those who deny that there are inherited action-patterns, are asked to account for the following facts of behavior as they are recorded, on the basis of extensive observations, by Darwin in *The Expression of the Emotions in Man and Animals* (The references are to the New York edition of 1886):—

"Rage, anger, and indignation are exhibited in nearly the same manner throughout the world" (p. 247). "Young children when in a violent rage roll on the ground on their backs or bellies, screaming, kicking, scratching, or biting everything within reach. So it is with the young of the anthropomorphous apes" (p. 241). Anger mixed with the attitude of defiance or sneering, as is well known, often expresses itself by "the upper lip being retracted in such a manner that the canine tooth on one side of the face alone is shown" (p. 249). "The action is the same as that of a snarling dog" (p. 251).

Darwin accounts for the sneer as follows: "The expression . . . of a playful sneer or ferocious snarl . . . reveals [man's] animal descent; for no one, even if rolling on the ground in a deadly grapple with an enemy, and attempting to bite him, would try to use his canine teeth more than his other teeth. We may readily believe from our affinity to the anthropomorphous apes that our male semi-human progenitors possessed great canine teeth. . . . We may further suspect . . . that our semi-human progenitors uncovered their canine teeth when prepared for battle, as we do still when feeling ferocious, or when merely sneering at or defying some one, without any intention of making a real attack with our teeth" (p. 253).

"As the sensation of disgust primarily arises in connection with the act of eating or tasting, it is natural that its expression should consist chiefly in movements round the mouth" (p. 258). "From the answers received from my correspondents it appears that the various movements which have now been described as expressing contempt and disgust, prevail throughout a large part of the world" (p. 260).

"With respect to fear, as exhibited by the various races of man,

my informants agree that the signs are the same as with Europeans" (p. 294). "We may . . . infer that fear was expressed from an extremely remote period in almost the same manner as it now is by man; namely, by trembling, the erection of the hair, cold perspiration, pallor" (p. 362).

In summarizing his discussion of the expression of the emotions and instincts Darwin says: "All the chief expressions exhibited by man are the same throughout the world" (p. 361). "That these . . . gestures are inherited, we may infer from their being performed by very young children, by those born blind, and by the most widely distinct races of man" (pp. 352, 353) [and by many of the animals, as Darwin says elsewhere]. "Whenever the same movements of the features or body express the same emotions in several distinct races of man, we may infer with much probability that such expressions are true ones, — that is, are innate or instinctive" (p. 15).

With the advent of Darwinism a half-century and more ago man for the first time came to be recognized distinctly as an animal. It is possible, of course, to overemphasize the animal-like aspect of human nature; but with certain psychologists at the present time there seems to be a tendency to react against the sane teachings of biology, and to emphasize too much the gulf between man and the animals. This tendency is illustrated especially by some of those who deny wholly or in part the existence of human instincts. Thus Ayres says, "The human species is not wild" (*Jour. of Philos.*, Vol. 28, p. 604). Now one does not have to go even to the trouble of observing the life of savages in the jungle to find evidence that man is rather "wild" after all. The observation among civilized peoples of mob-action in strikes, race riots, and even in some forms of popular religious revivals (See Davenport, *Primitive Traits in Religious Revivals*) reveals many traits of genuine animal "wildness" in man. Ayres says: "The dictionary compresses the characteristic activity of the orang into four lines; what, could it say, are the normal acts of man?" (*Ibid.*, p. 603.) The answer to this question, of what are the normal acts of man, can almost be summarized adequately in four *words*, as follows: To eat, create, procreate. Schiller said that hunger and love, sexual and parental, are the fundamental human motives. Certainly only half-a-dozen other deep-rooted motives need to be recognized in addition to these, and chiefly subordinate motives at that, in order to account for most of the behavior of man in the creation of his institutions. Ayres says, "When instincts fall out, institutions get their due. . . .

The social scientist has no need of instincts; he has institutions" (*ibid.*, pp. 561, 565). Now if instincts *should* fall out, institutions could not continue to exist; and without the motivating force of the instincts in direct or (and especially) in sublimated form, the characteristic human institutions could not have arisen. And instead of saying that the social scientist has no need of instincts since he has institutions, we are forced to say that the social scientist must measure the soundness of institutions in terms of their fitness to satisfy the demands of the human instincts.

A social psychology that does not base itself upon the instinctive motives of mankind is not getting down to fundamental principles. Due recognition, of course, needs to be made of the great part played in human life by habit-formation, or by education in the broad sense of the term, and by the arts of civilized society. The power of reason, too, belongs probably to man alone of all the animals. As Veblen says, however (*The Instinct of Workmanship*, p. 6), "Men take thought, but the . . . racial endowment of instinctive proclivities decides what they shall take thought of, and how and to what effect."

A HYPNOANALYTIC STUDY OF TWO CASES OF WAR NEUROSIS

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THE METHOD

IN the following account, the term "hypnoanalysis" is used as Doctor Hadfield and Professor McDougall, respectively, use it.[1] I believe my method is essentially the same as the one they have employed with such success in shell shock cases,[2] except that I always give the "explanation" while the subject is still under hypnosis. At that time he seems to be in such an objective, dispassionate frame of mind, that he can check up or revise any hypothetical explanation which is submitted to him, provided he is requested to do so.[3] Then, after its test in this fashion, I feel that the explanation, when positively stated and followed up by forcible suggestions, "takes" better than if given when the subject is wide awake.

This would not be true, of course, were not the positive suggestion given that the subject must remember the whole hypnotic experience upon waking. To make sure that such remembering occurs, I always test the completeness of recall, by the aid of notes taken by some third person. It would seem that such complete waking recall obviates any possibility of a forgotten hypnotic incident itself becoming a little dissociated system. That re-integration must always be a conscious process, is shown by the experience of the Freudian psychoanalysts, whatever be the limitations of their method; and it is waking recall, as is well known, which establishes hypnoanalysis as a more efficient method for re-integration.

In the two cases which follow, I have sought to explain the disorders, and their adjustment, in behavioristic terms. It might be well, therefore, to point out that if this effort is at all successful, it is not because the men studied here are of the same temperament.

[1] Cf. *Functional Nerve Disease*, edited by H. Crichton Miller, pub. by Oxford University Press, 1920.

[2] As described in pages 67–73 and in Prof. McDougall's chapter in that work.

[3] This experience is quite contrary to Judd's statement that "the hypnotized subject is quite incapable of subjecting any ideas to critical comparison" (*Psychology*, Second Completely Revised Edition, p. 291). It is a fact that he is relatively incapable of resisting ideas which are urged upon him. But this is why he must criticize ideas, to the limit of his capacity, if he is urged to do so. With the rest of Judd's account of hypnosis, and of its relation to sleep and to the neuroses (aside from his opposition to the use of hypnosis), I can heartily agree.

Rather, they are of very different types. The subject called DR, in particular, is by no means a born "neurotic."

Both studies were carried out in the summer of 1921.

I

A CASE OF "SOLDIER'S HEART"

HT is a promising college graduate, aged twenty-five years. His ancestry, which is of Scandinavian and British blood, consists of a vigorous stock. His father, however, has a quick temper, is unreasonable and threatening toward his relatives, and has deserted the wife and mother. The first home of the family was in a lonely district, where HT grew up very shy and self-conscious in regard to outsiders. "Always of a rather timid disposition," he had a number of severe scares in childhood. He seems to remember these shocks fairly well, however, although he had not thought of the one mentioned below for many years.

At the time of the hypnoanalysis, he complained particularly of a rapid pulse (often reaching 120), which would appear "without cause," as when he was merely reading or talking; and which would always come up upon the slightest physical exertion, refusing to go down to normal for perhaps hours. Strictly speaking, the pulse never went down to normal. For while his lowest ordinary pulse at this period was 92, at the time of his enlistment it had been 72. In addition to the heart trouble, there were intense headaches, nervousness, poor sleep, complete lack of appetite for breakfasts, and general inability to work and recreate. Several medical examinations having revealed no organic defects, HT was hypnotized, and during the hour the following story was obtained:

He is an eldest son. He resembles his mother, and has always gotten on splendidly with her. For his father, on the other hand, he has no affection. His father and mother have disagreed constantly; and shortly after HT's enlistment for oversea's service, his father disappeared without making provision for the wants of the large family.

This desertion on the part of HT's father left the young soldier much depressed. He wanted to be up at the front "with the boys," it is true, but he feared that in the event of his death his mother would lose her home, and his younger brothers and sisters would have to go to work. For he was now their only support; after his enlistment as "without dependents," he had had to make out allotment papers.

He soon came to the conclusion that under such circumstances he was worth more to Uncle Sam alive and well, than through death at the front. In order that his mother might entertain the same hope, he wrote frequent letters telling her that he was in no danger of bodily injury, and that he would probably be kept behind the lines until the war was over.

One day an officer told HT that shell shock involves a rapid heart and general nervousness.[4] Within twenty-four hours from the time of this conversation, as it happened, a shell exploded near our subject. He was seized with a violent trembling, ran some distance, and was shelled again. (At this point in the narrative HT was asked, "Did you ever have a childhood scare in connection with a 'bang' of any kind?" He remembered that when seven years old he had bitten a small powder-cap, with the result that it exploded in his mouth. This had frightened him to the point of violent trembling. His fear had been intensified by his mother's excitement and anxiety about tetanus. The incident had been followed by a headache which lasted for some days.) The night following the shock from the shell, HT lay awake until towards morning. Then after a short sleep he awoke with a severe headache, a rapid, paining heart, general nervousness, and complete lack of appetite. These, it will be noted, are the symptoms which have recurred since the time of shock.

These incidents having been recalled, HT was asked whether, regardless of his conscious intentions, his neurosis had not served as a resolution of the conflict between devotion to country and devotion to mother; whether, that is to say, the neurosis had not made it possible for him to be at once a soldier in France and a living eldest son. He saw at once that this was the case, and assented to the idea heartily.

He was then put much deeper into hypnosis. The operator placed his hand over the subject's heart, and said, "Now, you feel the nervous energy coming back into your heart.[5] This means that you

[4] This item, which came at the beginning of the original course of events, was not obtained from the hypnotic subject until late in his narrative, and then only after close questioning.

[5] Although I believe heartily in the stimulus-response type of deterministic psychology, I do not regard this suggestion to the patient as a mere metaphor. Rather, his report upon waking that he "felt as though electric needles were going through his heart" (sensations which came purely from suggestion, of course), denoted a real breaking-down of synaptic resistances, a redistribution of nervous energy. One is reminded of Münsterberg's remark, regarding the production of blisters, nose-bleeds, and pulse and temperature changes under hypnosis, that "our understanding of these indubitable facts indeed does not go further than the acknowledgment that the paths for such central connections exist." (*Psychotherapy*, p. 302.)

will be bothered no longer by any defective innervation causing rapid pulse. From this moment on, your heart will work as it should. Nor will you be bothered by the other symptoms. Your cure will be complete, partly because I tell you so now; but principally because you have recalled the determinants of your troubles, so that you no longer need to behave as though you were still back in that original war situation.[6] And you now *understand*, *how* you were predisposed to allow that shell shock type of behavior to 'set,' and *why* it is absolutely unnecessary for the reaction to continue. In short, you are cured.

"Now you will remember all these things upon waking, so that you can tell me about them. You will feel fit, able to meet all the ordinary eventualities of life. Tonight, you will sleep well. You will be hungry for your breakfasts, your headaches will disappear; and your heart will be normal. Hereafter, no one will be able to put you into this condition without your deliberate, express, consent. Now as I count ten, you will wake up, cured, and able to tell me all that has been said during this hypnosis."

When awake, the recall, the explanation, and the suggestions were repeated, and HT felt convinced that further trouble was unnecessary. The whole time taken, including that required for the preliminary explanation to the patient, for the hypnosis, and for the waking recall, was approximately two hours.

OUTCOME OF THE TREATMENT

One month after the hypnoanalysis, HT reports verbally that from the day of hypnosis he has had no further trouble from the heart; he enjoys a hearty breakfast every morning; regularly he experiences sound and refreshing sleep; the headaches recur with about their usual intensity, but only after severe excitement; and he feels stronger and more sure of himself. (The recurrence of the headaches would suggest either a psychically irreducible organic weakness, or an earlier, as yet uncovered functional predisposition toward this trouble.)

About a week after the foregoing report, it developed that HT was operated on for a deviated nasal septum. The operation revealed

[6] Hollingworth's explanation of "redintegration" describes this mechanism exactly (Cf. his *Psychology of Functional Neuroses*, Chs. II–IV). As a theory to explain the neurosis as a whole, however, it seems to me that Hollingworth's conception of redintegration is only half of the explanation. For while *redintegration* may account for the welding of a system of responses into an undiscriminating functional unit, it is *dissociation* which accounts for the breaking-off of this unit from the mass of conscious responses, so that the now independent system is beyond subjection to what Hollingworth calls the individual's "sagacity."

considerable nasal catarrh and inflammation which had been affecting the eyes and possibly the ears. Correction of the trouble has made his head feel lighter and clearer, and has enabled him to breathe through his nose instead of through his mouth.

Two months from the time of the hypnosis, he writes: "I know you are expecting a word from me, and I certainly owe you a debt of gratitude. When you last saw me I was weak — but I have had a fine vacation since and now weigh nearly as much as I ever did. I feel better — surer of myself in every way — thanks to you and Dr. Walton [whose book, *Why Worry*, I had lent HT in order to insure a good mental attitude. W. S. T.], I don't feel the morbid curiosities I used to. If you were the discoverer of 'Tanlac' I could write a wonderful newspaper testimonial and tell the world about it — but as it is, all I can do is to tell you of my sincerest gratitude for your interest and help."

Three months after the hypnoanalysis, HT writes as follows: "I have continued gaining weight, and now weigh within a pound of what I weighed when enlisted. The Veteran Bureau nurse . . . took my pulse and was surprised to find it 75, standing. . . . I get a great deal of exercise regularly, and the heart is normal. . . . Dr. Walton taught me how to go to sleep, and I sleep soundly. My general efficiency is greatly improved — greater than it ever was before, it seems to me. I have no more of those sharp, splitting headaches which were so troublesome. My morbid curiosities were due to introspection. — 'Was I subnormal in bravery?' 'Inferior to others?' 'Were others more intelligent than I?' 'Why didn't I have special gifts like others for music, baseball, or some specialized activity?' I constantly pictured myself inferior to others by comparing myself to them. This may be due to poor teaching early in life. I am getting over this attitude once and for all. I have a career motive now that does away with all this."

Of course it is impossible to say how much of the improvement in HT's condition has resulted from the hypnotic treatment, and how much from the surgical operation. But I believe that each amounted to a sudden removal of a great part of the burden upon his system.

SUGGESTED IMPLICATIONS OF THIS CASE

HT's neurosis is clearly a result of conflict.[1] But there is nothing

[1] This conception, conflict, is examined below. (P. 354, par. 2 and 3.)

"teleological," or "purposive," about it, in any other sense than that all behavior is purposive, from one point of view. The neurosis was a resultant of forces, these forces being response systems, set at various pressures, awaiting opportunity for release. At first, there was prepared, through education, the system for responding to a call to the Front. HT's behavior followed that system, and he went to France. Then all reflexes naturally antagonistic to that course of action were re-enforced by his father's desertion, and were organized into a "wish"[8] to remain alive. The antagonism between these two systems of approach and withdrawal, respectively, was intense. He must inhibit one of them; he must develop a new and peace-making response system; or he must be broken between the urges.

At this juncture, there appeared a third action-possibility in the form of the officer's suggestion as to the nature of shell shock. The suggestion fell upon ground prepared somewhat by heredity, perhaps, but certainly by a childhood experience (the cap explosion) and doubtless by occasional general phantasies about shell shock.[9] This new, implicit sensory-motor "set" was soon touched off as an explicit system, and became the final common path for the opposed major systems.

But the new system also became a neurosis. This resulted from several conditions. In the first place, the new system was "stamped in," or fixated, in a moment of great fear; and fear may be, like hypnosis, a time of general dissociation, in which the then unrestrained mental elements can easily be bound into complexes. In the second place, the ideational factors of this system were painful. Hence as their integration would be difficult, they continued their life in the realm of amnesia; i. e., as a system whose cortical portion was dissociated from the rest of the subject's cortical life.[10] Again, this separation was perpetuated through a struggle for its own integrity on the part of the system of higher social responses (often called "conscience," "ethical self," or "Censor"). For obviously, these higher responses, as then organized, could not function at the same time that the self-protection (the withdrawing) system was functioning; at least not through the same central apparatus. Hence the

[8] As behavioristically interpreted by Holt in *The Freudian Wish*.

[9] Cf. Bernard Hart, *The Psychology of Insanity*, Chapter on Phantasy.

[10] Prof. McDougall's theoretical picture of this state of affairs, in terms of nervous organization, appears in his discussion of *The Revival of Emotional Memories and its Therapeutic Value*, in the Brit. Jour. of Psychology (Medical Section), Vol. I, Part I, October, 1920, pp. 26–27.

higher system found it most difficult to come to terms with one component of the neurosis, and did not effect an intelligent correction of that response pattern. And finally, there was no immediate environmental demand, no great ambition, which compelled an alignment of all the forces of the personality, had such an organization been possible.

The net result was the neurosis: an action pattern, protected by high synaptic resistances from inhibition by the rest of the brain; an automatism, a redintegration, which, being dissociated, must function mechanically, like a spinal reflex. The individual had suffered a division of his response forces, a division which persisted until he found the desire and the means to attain to re-integration.

Now for the Freudian, this conflict would be a clear case of the "œdipus complex": The son was in love with his mother. It happens, however, that this man was genuinely in love with some one else, and that there was no "dammed up libido" awaiting "conversion" into somatic symptoms.[11] It would seem preferable to regard the "œdipus" aspect as an infantile fixation of mutual-understanding-and-protection responses, which had grown up through the principle of the conditioned reflex; and which would not have loomed so large in the young man's life had he ever been provided with a wider horizon for his behavior.[12] In this sense it is true that his close home life had not fitted him for meeting the world of facts.

II

A CASE OF WAR DREAMS

DR is a veteran of twenty-two. He is intelligent, well-balanced, and very virile. His ancestry, home adjustments, and personal history have been eminently normal.

Upon learning from a friend that I had been working in this field, he came asking to be hypnotized purely for the sake of the experience, not knowing that hypnosis could be put to a practical use. Upon being asked whether he had any morbid fears, or mental bothers of

[11] Under the circumstances I can only say that this assertion is made with full recognition that some Freudians insist such "damming up" must not be interpreted in any crude sense. Cf. Dr. H. W. Frink's *Morbid Fears and Compulsions*, p. 268. I think, however, that the "cathartic" aspect of that theory finds adequate answer in Prof. McDougall's article, cited in the preceding footnote; and that the more strictly ontological (libido) aspect receives sufficient treatment in, for example, Dr. George Humphrey's *Education and Freudianism*, JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. XV, Nos. 5–6, December, 1920–March, 1921, p. 384.

[12] Cf. Watson's discussion of the readjustment of out-worn habit systems, in his *Psychology from the Standpoint of a Behaviorist*, pp. 415–420.

any kind, he remarked that since his return from France he had been generally "on edge," and unable to concentrate well; that he could not sleep more than six hours at a stretch; and that about four nights a week he had a certain nightmare, as a result of which he frequently awoke in the act of choking his bed-fellow, or found himself on the floor in all sorts of queer postures. The dream which inspired this behavior was about a time in France when he was "cornered up." Of the dream, however, he could remember only the beginning, just as in his waking state he was unable to recall the climax of the actual incident.

Under hypnosis, by the aid of much urging DR recalled the events of a thirty-seven hour gap in his memory. At 2.00 A.M. on a summer's day the sentry had deserted, and his dugout was surprised by Germans. All but four of his party were killed by hand grenades; and of the four, two were captured. The remaining two, the Captain and the subject of this study, escaped into a ravine. Although the place was full of gas, they removed their masks in order to see the way. In spite of this precaution, however, DR became separated from his Captain and never saw him again. DR went on until a piece of shrapnel struck his hand, wounding it and knocking his revolver out in the darkness. At the same time he received sensations of warmth and wetness, which never came into consciousness, however, until this hypnosis, explaining the origin of a wound on his buttock. He tried to press on, but found himself bleeding from the lungs and unable to rise from a creeping position.

After a time DR felt a kick in his side, and looked up to see two Germans standing over him. He tried furiously to get his trench knife, but found that his wounded hand could not be made to grip it. In the struggle, one of the Germans, called Hans, hit him over the temple with the butt of a Mauser revolver, saying "Gott verdammt Sie, Schweinhund," as he did so. Hans was for leaving DR, but the other German's suggestion that they might be able to get information out of the American resulted in his being carried back to a German dugout. Although at least partially unconscious at that time, under deep hypnosis DR was able to recall the appearance of Hans, the stretcher made of two guns and a gray coat, and the bleeding from his buttock upon the coat.

The Germans carried him some distance to a deep new dugout. Here a German Lieutenant and his orderly tried to force DR to drink some black coffee, in order to make him talk. (DR explained at this

point that when he got back to the hospital, the doctor said that hot drinks were very bad for those whose lungs were full of chlorine. "For some reason" this remark made a great impression upon him, in spite of his amnesia for his own hot drink.[13]) The Germans' effort to get information was not successful, however, as he "did not wake up."

In a short time a heavy barrage started. This was followed by the appearance of a party of Americans who took possession of the dugout. One of the Americans, a Sergeant of DR's own Company, was bayonetted so that his intestines hung out. A big Prussian was bayonetted to the doorway and was left standing there, dead. The remaining Germans were marched off as prisoners by American marines.

Finally DR was picked up by rescuing hospital corpsmen (one of whose number had been killed on the way to the place) and was put in an ambulance with several wounded German and American soldiers. The roads were very rough, and he experienced such difficulty in breathing that one of the ambulance men gave him a dose of morphine. At the same time the fellow stole DR's spy glasses, remarking: "If this keeps up much longer, it'll be said that the hospital corpsmen won the war, because they'll have all the souvenirs." After the morphine, according to DR, "there were no more rough roads." He woke up in a hospital some hours later, when a nurse was sponging him; and he remembered nothing of all the events that had occurred since he was struck by shrapnel in the ravine.

As this story seemed to cover "every bit of space," DR was told to remember it all upon waking. He was then given the usual positive suggestions, and was aroused gradually.

When awake, DR was most reluctant to repeat the story, because he feared it would give the impression that he was fabricating. Evidently he was so surprised by the outcome of the hypnosis, that he completely forgot the explanation which had been given at the start. His waking narrative was punctuated by such remarks as these:

"Why, a member of my Company just the other day told me that Sergeant K— was wounded, but he did not know how. . . . This must be everything that happened during those thirty-seven hours. . . . Is *that* how I got the scar on my temple? The

[13] This is evidence for the essential similarity of a traumatic amnesia to one hypnotically induced. A number of such instances of connection between "the conscious" and "the subconscious" are given by Jastrow in "The Subconscious," p. 291, circa.

nurse asked me but I never knew before. . . . So the doctor was right about the buttock wound. He said that it was probable that I got it at the same time that my hand was hit, only I felt no pain from it because I was thinking of my hand. . . . Did that fellow take my spy-glasses? Gee, I'm sorry to remember this, for I know him. If I should meet that guy again . . ."[14] etc.

Thus DR retold his story. At its conclusion, he felt that he understood the situation so well that he would have no more nightmares of the war experience.

As in the preceding case, the total time required was not more than two hours.

OUTCOME OF THE TREATMENT

One month after the hypnosis, DR reports verbally that he has had only one bad dream, and that he remembered that one upon waking. Otherwise his sleep has been fully up to normal. He has felt a new fitness, and a balance, which has made his work a pleasure.

Three months from the time of treatment, DR writes: "Since last interview, I had *one* of the old dreams; that night I had eaten welsh rarebit; perhaps this accounts for the dream.[15] From time of experiment to present date, have gained ten pounds and my general condition is improving all the time."

SUGGESTED IMPLICATIONS OF THIS CASE

Especially interesting is DR'S gain in strength after re-integration. Sometimes this phenomenon can be observed through physical measurement. One of Professor McDougall's cases had the strength of his grip increased 200 per cent (from 30 to 90 kilograms) through sudden recovery from a large amnesia.[16] And this would seem to be the natural result. For when antagonistic action systems are in com-

[14] Thus far we have been unable to locate the spy-glass man for corroboration of this tale.

[15] Perhaps the welsh rarebit only occasioned the release of a small unrecalled portion of the original amnesia. True, he had stated, near the end of his hypnosis, that the history was complete; but I did not urge him to be "absolutely certain" that such was the case, because he had already recalled so many distressing experiences, and because by that time he had been under hypnosis for nearly an hour and a half. But upon waking, he hesitated a great deal when describing the happenings in the German dugout, and said he felt "there was something more." As he had repeated all that was told during the hypnosis, however, I urged him to recall the rest when awake, or to come back for another, short, exploration of that portion of his memories. This was never done.

[16] *Functional Nerve Disease*, p. 192. It is gain of this sort, I would add, which explains such sayings of psychoanalysts as "The patient has attained to a soul."

petition for the effector apparatus, only the free margin of the victorious forces can be expected to move that machinery. Or if the competition is such that one third of the cortical apparatus, in repressing another third, is in a state of deadlock with it, the free third which remains is naturally overworked.

Perhaps, as Doctor Humphrey proposes, the *discomfort* of conflict (perhaps even a great part of the nervous damage that results[17]) is "due to the partial excitation of a system of reflexes"; since "there is no evidence that mere inhibition does psychical harm, any more than, according to Sherrington, it does physical harm"[18]; and since "partial excitation of one trend [e. g., hunger] can produce exactly the same result."[19] But while such partial excitation may account for the pain of conflict, it does not follow that Sherrington's work makes conflict itself a superfluous conception.

Inhibition, indeed, is perfectly normal. But in the case of a neurosis, there is not the real, complete inhibition through drainage which Sherrington calls "reciprocal innervation." There is only "distraction," or mutual inhibition of *two* stimulus-response mechanisms.[20] In other words, there is between response systems an antagonism at a level lower than that of the proper co-ordinating center; there is physical conflict between physical forces, instead of the healthy "switching" of reserves into unified action, so characteristic of cerebral co-ordination. Hence until some more satisfactory mode of description appears, we should acknowledge our indebtedness to Freud for calling attention to the importance of conflict in the neuroses.

However, while this much of Freud's language is valuable here, it does not follow that DR's neurosis is at all capable of being squeezed into the Freudian system. Even less than in the preceding case, that of HT, can we hold "the libido" accountable for the trouble. In DR, apparently, we find a robust constitution which was simply broken by excessive environmental demands. The break occurred when DR's powers of resistance were at their lowest ebb; that is to say, in this instance, when his dissociability was greatest. For he was exhausted by severe fighting; he was depressed by the casualties in the ranks of his fellows; he was deprived of the moral support of

[17] Cf. Crile, *Man — An Adaptive Mechanism*, pp. 153–155.

[18] *The Conditioned Reflex and the Freudian Wish*, JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. XIV, No. 6, February, 1920, p. 392.

[19] *Education and Freudianism*, JOURNAL OF ABNORMAL PSYCHOLOGY, Vol. XV, No. 6, March, 1921, pp. 372–380.

[20] Cf. Smith and Guthrie, *Chapters in General Psychology*, p. 37.

comrades, even of the strength that comes from fresh air, during his effort to escape; then he was shelled, wounded, unexpectedly struck on the head by his enemies, and was subjected to further mental torture. Much of all this occurred while he was in a partially unconscious condition; and the distance from his waking life was increased by a morphine sleep.

But while the only important conflict in this personality seems to have been that between a pleasant system and a painful system, the methods of repair were essentially the same as those employed in the preceding case: Preliminary explanation, hypnotic recovery of the dissociated system, and re-integration through (hypnotically suggested) waking recall.

Note: The captions HT and DR are abbreviations of the symptoms merely.

A NOTE ON DARWIN'S WORK ON THE EXPRESSION OF THE EMOTIONS IN MAN AND ANIMALS [1]

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I

BEFORE discussing Darwin's work it will be best to present a short statement as to the significance of the expressive behavior of men and animals, so far as we can judge this matter in the light of all the knowledge at our command at the present day.

Expressive behavior is of very great importance. It is important because of its meaning to the agent (the organism that is behaving in an expressive manner) and to other organisms that perceive the expressive signs. Or, to state the same thing in another way, expression is important because of the psychological effects which it produces both in the expressing individual and in other individuals that perceive the expression. In many cases the agent directs his expressive behavior definitely toward a certain other individual, who is called the patient, in contrast to the agent, and who receives an *im*pression corresponding to the agent's *ex*pression.

As the effect on the perceiving individual, the patient, is the most obvious, I shall mention it first. When I am angry, this state is revealed in the expression of my face, in the tone of my voice, and in my entire attitude and bearing. This fact is of great importance, because it makes other persons beware of my wrath, and it helps me to bring it about that they shall obey my will. What is true of anger is true of other emotions, and what is true of men is also true of other animals. Indeed, our thesis is in some respects even more true of infra-human animals. Because man has come to use words and these have in some degree supplanted the natural expressions; but the other animals, having no words, are under necessity of doing all their communicating by means of so-called "emotional expression." The effectiveness of such communication is striking. The cat with her back up, her tail thickened, and with spitting and growling, tells her tormentor, more forcefully than words could tell it, that she is ready to scratch and bite. The reader has seen plenty such examples, of course, in dogs, cats, hens, and all other familiar animals. There is

[1] Darwin, Charles. The Expression of the Emotions in Man and Animals. New York, 1873.

no need for me to take time for details.[2] Darwin's book is full of interesting examples, and his descriptions of them show that he had a keen understanding of animal nature. He says (p. 11): "Man himself cannot express love and humility by external signs, so plainly as does a dog, when with drooping ears, hanging lips, flexuous body, and wagging tail, he meets his beloved master." Such expression on the part of the agent is of great importance because of the impression which it makes on the patient. Our first point is, then, that expressive behavior is important because it is perceived and understood by other individuals.

Probably one of the most important laws governing the evolution of expression is this, that the expressive behavior and the faculty of perceiving such behavior and being moved by it are evolved *pari passu*. The voice has developed no faster than the ear. Display of form and color and gesture have evolved in intimate connection with the evolution of the eye and visual perception. The agent and the patient have evolved together.

Our second point is that expressive behavior is important because of its meaning to the agent himself, and its psychological effect on him and on his overt behavior. This point would not be quite so evident to the layman, but it is obvious to all who are conversant with modern physiology and psychology. Expressive behavior consists partly of physiological changes, such as those in internal secretions and the circulation, which are important psychologically because they have to do with "warming up," "tumescence," "enhancement"[3] and all that sort of thing.

The other part of expressive behavior is the muscular, largely in the voluntary muscles, which is equally important psychologically, because, as all modern psychology teaches us, slight muscular movements are of great importance in connection with meanings.

To illustrate: I find this, our second point, very clearly exemplified in my own experience whenever I feel called upon to say something which I know will be resented by others. My feeling is strongest when I rise to express, before an audience, an opinion which I know will be unpopular with that audience. This situation was experienced more often in my younger days: as we grow older we are less ready to hurl our thoughts recklessly against opponents. But I

[2] I have given many details in other papers, especially in the Voices of Pigeons Regarded as a Means of Social Control, Amer. Jour. of Sociology, July, 1908, Vol. 14, pp. 86–100.

[3] Hirn, Origins of Art.

meet the same experience in milder form now when I am called upon to tell a tradesman that he has cheated me, and that I intend to have it out with him. I shall describe my experience frankly, knowing that the reader will be able to recognize it and duplicate it in his own experience. Well, when I used to rise before the hostile audience I felt my limbs trembling, my knees unsteady, tightness in my throat accompanied by swallowing movements, and a general change in the body which probably included a host of details that could not be detected by introspection. The importance of these was that they gave a meaning to the situation, an unpleasant meaning, one of "danger"; and their effect was, in some cases, to prevent me from going too far — in other cases, to prevent me from even entering upon my unpopular course. Now, if expressive behavior can so profoundly affect the agent, and dominate him — if it can keep him from going too far, from running heedlessly into danger — it is for that reason of the utmost importance.

What I have just said of the human being applies also to other animals. Dogs and cats and other mammals and birds show us unmistakably that they, like us, are profoundly influenced by the "workings of their insides," in what we call fear, anger, joy, love, and various other emotional states. My dog has sometimes shown plainly enough that he would like to fight a certain other dog, but he is held back by the trembling of his limbs, the palpitation of his heart and the general sinking of his poor frame. But, as these are examples of negative action, the animal being held back, I should like to mention one on the positive side. A broody hen furnishes a good example. When she becomes broody, her vitality is lowered, her body sinks low down, her wings droop, she is weakened and impelled to sit. When she sees her nest full of eggs this stimulus arouses in her very definite reactions, — such as stepping gently into the nest, covering the eggs, and hooking them with her bill, all of which actions are, to the hen, strongly emotional. These reactions give a new affective meaning to the sight of the nest and eggs. This guides and controls the hen's behavior, swaying her by the powerful impulse to incubate the eggs. Similarly, if we examine a host of cases of emotional expression in birds and mammals, we find that the expressive changes are of great importance because of their meaning to the agent and their control of his (or her) behavior.

We have thus pointed out briefly that emotional *expression* is important in man and other animals. We need also to emphasize

the more fundamental fact that *emotion* is important. The importance of the emotions was not sufficiently recognized in Darwin's day, but has gained much more recognition in our day. Adequate appreciation of the significance of emotion can be gained only by very wide and deep study, including not only psychology of the emotions but also social psychology, esthetics, cultural anthropology, and mental mechanisms. Emotion is a great part of human life. Emotion lends force and guidance to the life of every human being, from the most ignorant devotee of the blood-curdling "movie" show, to the philosopher who is impelled by an emotional search for truth.

This thesis, that emotion is important, that it supplies motive and guiding power, is true of all mammals and birds. The study of the emotional life of animals is a vast field which has scarcely been touched. When this field has been adequately developed we shall have a psychology of the emotions of animals, social psychology of animals, animal esthetics, and animal mental mechanisms. The dog has sentiments, as truly as we do, and the fundamental laws governing the sentiments of the dog are the same as those worked out so admirably by Shand[4] for the human being. In animal life, as in human life, emotions are of the utmost importance.

Darwin raised the question, How did the emotional *expressions* of the higher animals come about by evolution? He did not see so clearly as we see, in our day, that this question is very closely related to the more fundamental one, How did the *emotions* arise and develop in the course of evolution? A strict behaviorist would say that these two questions are really one. Now, how should we answer the question? We should answer it by saying that since the emotions and emotional expression are of very great importance, they have evolved probably according to the same laws as have governed the evolution of a host of other useful adaptations. The problem of the *method* of evolution is one for the biologist to solve: the psychologist should let it alone. When the psychologist has shown that emotions and emotional expression are a necessary factor in the life process of all the higher animals, he has shown that we do not need to posit any peculiar or exceptional laws to account for their evolution. I shall recur to this point, briefly, at the end of this paper.

II

Having presented very briefly, in Section I, the modern view of

[4] Shand, A. F. The Foundations of Character. London, 1914.

emotion and emotional expression, we shall now take up Darwin's view. I can take it for granted that the reader is quite familiar with Darwin's "three principles," namely: (1) The principle of serviceable associated Habits; (2) The principle of Antithesis; (3) The principle of actions due to the constitution of the Nervous System. Of these three, Wundt suggested that the third really ought to be placed first. Naturally, the forms of expression are due in part to the constitution of the nervous system, regardless of the utility of the particular expression. That principle is readily admitted, it is not peculiar to Darwin, and we shall pass it with this brief mention. The second principle, that of antithesis, is a subordinate one, and we shall take it up presently. The principle which Darwin placed first, that of "serviceable associated Habits," is the one, of the three, which is most characteristic of his work. His discussion of it, with his abundant illustrations, contains much that is true and interesting together with much that we must now regard as erroneous. The principle itself is not very clear and definite; a complete criticism of all that Darwin says on it would require a long treatise. Therefore, in this short paper I wish to take up chiefly not the principle itself but rather the fundamental idea that lay behind it.

This fundamental idea Darwin states on p. 355 thus: "There are no grounds, as far as I can discover, for believing that any muscle has been developed or even modified exclusively for the sake of expression." He tells us in this work (p. 10) and also in the Descent of Man (p. 4) that his purpose in writing this work on The Expression of the Emotions was to prove the thesis which we have quoted. Thus, Darwin's aim throughout his work was to prove that expressive behavior was not evolved as such. It evolved from behavior which originally had some utility other than expression. In some cases it still has this utility other than expression. In the cases in which it has lost its other utility and become mere expression, it is a useless trait, persisting merely because of the laws of heredity — a vestigial trait, to be classed with the vermiform appendix and other remnants that have lost their utility. He says (p. 42) "My object is to show that certain movements were originally performed for a definite end, and that, under nearly the same circumstances, they are still pertinaceously performed through habit when *not of the least use*." (Italics ours.)

This view we must regard as containing a great error. It is contrary to all that we set forth in the first part of our paper. We there

set forth two principal theses, the first of which was that expressive movements are useful as a means of communication between organisms, a means by which one individual can influence or control another, and they must have evolved as adaptations to this end. This thesis Darwin denies.[5] Our second thesis was that expressive behavior is of great importance because of its meaning to the agent himself and its effect on his own behavior, and this is one of the most important facts to explain the evolution of expressive behavior. This thesis, Darwin does not mention; it belongs to our age rather than his, and it is contradicted by his statements.

In pointing out the error of Darwin's view we are not criticizing him individually, but rather his age. For when we come to inquire how Darwin could have set forth a view so utterly erroneous, we find reasons for it which we can readily understand, and they all pertain to the characteristics of his age. To make this clear, I shall give six reasons which go to explain how Darwin came to expound so erroneous a thesis.

1st. The task of Darwin and his co-workers was to convince the world of the truth of evolution, and to refute the arguments of those who believed in special creation. The special creationists taught that language and the other means of expression could not be explained by a utilitarian theory of evolution; but were given to man solely that he might express his feelings. In so far as Darwin refuted this doctrine, we are indebted to him. In so far as he taught that emotional expression is a product of evolution; and found its origin in utility, he was right. But his conception of its utility was too limited.

2nd. Darwin and his co-workers set themselves the task of proving not only that evolution took place but also how it took place. We now know that they tackled far too large a problem. They were in too great haste to solve all the problems of evolution at once. In so far as this made their work popular, took Europe by storm, and at once convinced the whole world of the truth of evolution, it was good. But for pure science it was unfortunate. It was this unfortunate haste that led Darwin into the generalization that all expressive

[5] Darwin's statements are not altogether clear on this point, but there can be no doubt that his intention is as I have stated. His principal idea is that no characteristics have been evolved for "expression." This might leave some doubt as to whether he meant to include communication under "expression." But in other places he makes clear his idea that utility for purposes of communication cannot explain the evolution of emotional expression. On pp. 60–65 and 355–356 he takes pains to explain that certain actions which are very useful for the purpose of communication cannot have been evolved for that end.

movements are merely vestigial. We must make this point clear by an example. A human being, when defying another, sometimes bares the canine tooth. Darwin explained this as a relic inherited from ape-like ancestors who had large canine teeth, used in fighting. We think that as a matter of history this is probably correct. But why has the action of baring the tooth persisted to this day, long after it ceased to have any connection with fighting? Darwin's answer is that such traits persist because they were so often repeated that they became hereditary, by virtue of the supposed law of the effects of use and disuse. We must regard that answer as contrary to the best scientific knowledge of our day. In place of it we must substitute the answer that the movement of baring the canine tooth has persisted to this day because of its utility as a piece of emotional behavior. For, in the first place, it communicates to the person at whom it is directed a message of defiance and, in the second place, it constitutes a part of the bodily change in the agent which gives him the feeling of defiance, and which influences his behavior accordingly.

Again, the eagerness of Darwin to reach a complete account of biological evolution is seen in the haste with which he dismisses the case of the vocal muscles. For when he expresses his belief that no muscle has been developed exclusively for the sake of expression, the vocal muscles naturally came to mind as an exception to this rule. Darwin dismisses this, saying that the vocal muscles were developed by sexual selection. We must say, on the contrary, that the entire theory of sexual selection rests on a doubtful foundation. And even if we knew that sexual selection could be an important factor in evolution at all, it certainly could not explain the development of the vocal muscles and of the nervous apparatus which controls those muscles in singing and in speech. Unseemly haste to reach a complete theory of evolution is of course more evident in many of Darwin's co-workers than in Darwin himself. Thus Weismann,[6] writing on the evolution of music, says that the best the evolutionist can say in regard to the music of man is that it is a sort of accidental by-product of the development of voice and ear, which were evolved for crass utilitarian ends. We think this statement of Weismann's is an example of the absurd length to which a theorist will go in order to bring all facts into subordination to his theory. We should say, in contradiction, that the musical voice and the power to appreciate music were both evolved

[6] Weismann, Aug. Gedanken ueber Musik bei Thieren und beim Menschen. Deutsche Rundschau, 1889, vol. 61, pp. 50–79.

because of their psychological importance, because of their psychological influence on both the singer and the listener.[7]

3rd. The third reason for Darwin's emphasis on the idea that expressive behavior developed from the non-expressive was that he was particularly interested in discovering the *origins* of traits. He took more pains to discover their very beginnings than to account for their later evolution. In so far as this was his intention, his main idea has much truth in it, and is very interesting. It certainly is interesting to know that the human sneer developed from the baring of the canine tooth preparatory to biting the enemy. But the further question as to why this movement persisted after it had lost its original utility is a very different question, and we believe that Darwin's answer to this question was wrong, as we have already explained.

Our view may be made clearer by two other examples. When a pair of pigeons mate, they go through a process of "billing," which is a movement as if the male were feeding the female, although (so far as we know) no food is passed. The Darwinian explanation of this would be, doubtless, that originally the male did feed the female, and that the present movement which resembles feeding is a mere useless remnant which has persisted as an "inherited habit." We should say that this is not correct; the feeding movement has persisted because of its affective meaning to both the male and the female, for it is powerfully stimulating to both.

A second example. At the consummation of mating, in the case of some birds such as the domestic fowl, the male seizes and holds the female by the feathers on the back of her neck. The male pigeon never does this, yet he invariably makes a movement as if he were about to do so. The Darwinian explanation of this movement of the pigeon would be that in a remote ancestor of the pigeon of today the male did hold the female by the feathers on her neck, and that the present-day movement is a mere remnant of that former act and is now useless. We answer that the movement is very far from useless: it is exceedingly useful to orient the male into exactly the proper position. And while it thus guides the male it probably also stimulates the female to hold herself in readiness for the male.

We have admitted that there is this much truth in Darwin's fundamental thesis: that the very beginnings of expressive movements are not expressive, or not merely such. If we trace back an expressive movement far enough, we find that it arose out of some-

[7] See footnote No. 2.

thing else. But we would now add that this thesis, although true, is not of great importance for psychology, and it has not the special significance which Darwin supposed. It is not a new thesis, distinguishing the evolution of expression from any other kind of evolution. Indeed, so far as this fundamental idea is true at all, it is merely a restatement of the idea of evolution itself. Just as legs developed from fins, and wings developed from legs, and a hand developed from the fore-foot, — so expressive movements arose out of something that was not such. But the evolutionary progress of the pigeon's wing at the present day depends upon its efficiency as a wing, not as a foot. Similarly, the evolutionary progress of the male pigeon's instinct to "bill" depends upon the efficiency of this act as a stimulus to himself and to the female, and does not now depend on the fact that it formerly (perhaps) served to feed the female.

4th. A fourth reason for Darwin's error lay in the fact that in the human species the natural forms of expression have been largely supplanted by conventional language. When we communicate with each other, we tend to give all our attention, both when speaking and when listening, to the words used, and we thus fall into the egregious blunder of supposing that the "mere" expression of face and voice is of no importance. Darwin was especially exposed to the danger of this mistake because he was an Englishman, for the English tend to do away with all conspicuous gestures. And English psychology, especially that of his day, tended to neglect the margin of consciousness. But all our recent studies in psychology recognize the importance of the slightest movements, or even mere tendencies to movement, and show us that these, although in the margin of consciousness, or even unconscious, are nevertheless of the utmost importance.

5th. The fifth reason for Darwin's error is closely related to the fourth. It is this. He supposed that if any movement is developed as expression, it must be voluntarily used for that purpose, the agent having a perfectly clear and intelligent grasp of the purpose. This is brought out especially in his treatment of his second principle, that of antithesis. This principle, rightly interpreted, is, I believe, one of the most important in regard to the evolution of emotional expression. The dog when friendly wags his tail, even wags the entire hind part of his body, and in every other way acts in a manner as contrary as possible to his manner when hostile. The reason for this is that his signs of friendship are thus most easily understood, can be understood even at a distance, and make the quickest and most desirable

impression on the friend toward whom they are directed. What is true of this expression in the dog is true of a host of expressions in many animals. Darwin saw all this — but then he went on to say that this could not be the explanation of the evolution of such expressions because the animals are not intellectual enough to reason out the principle of antithesis and (p. 62) "deliberately invent" such signs! To us, Darwin's thought here seems very strange; it is part of the extreme intellectualism of the school to which he belonged, which is very foreign to our ways of thinking. I trust that no reader nowadays will think that I am guilty of the absurd intellectualism which Darwin supposed to lurk in every psychological view of animal expression. I am defending the view that expressive movements have evolved as such because of their meaning; and antithetical movements have evolved for antithetical meanings, because the antithesis in the expression gives it the greatest efficiency. But I do not for a moment suppose that the animals understand these things and "deliberately invent" them.

6th. The sixth reason for Darwin's error is one which is not so obvious as the other five. Yet it will be obvious, I think, to any one who has ever really become acquainted with a dog, or other pet animal. It is this. Darwin did not sufficiently realize what a wealth of meaning there can be in the expressions of an animal below man. This again is not a criticism of Darwin individually, for he shows that he understood animals deeply — far better than most men do. But no man yet has any adequate conception of the emotional life of the animals below man. Darwin's book is, for a work purporting to deal with the fundamental principles of the evolution of emotional expression, too closely centered upon man. For the purpose in hand it would have been better to have centered the book upon some other animal. For instance, in all the book there is nothing to tell us satisfactorily why a pigeon coos. Inadequate understanding of the infra-human animals is revealed in the statement made on page 10:

"No one, I presume, would be inclined to admit that monkeys have been endowed with special muscles solely for exhibiting their hideous grimaces."

That Darwin could express his thought in such terms shows that he himself was not sufficiently an evolutionist. He could not altogether escape the prejudices of his age. He did not sufficiently grasp the fact that the expressions of the lower animals have the same sort of importance for them as our own means of communication have for

us, and thus he failed to see that the basis of the evolution of emotional expression in all mammals and birds is psychological. But even in our day, the psychology of emotion in animals has hardly been born. I have touched upon this point above (page 359), and also in my other papers, and must not dwell longer on it here.

Before closing, it may be well to point out a larger aspect of the trend of thought presented in this article. The criticism of one book, which has been presented, is part of a larger criticism which might be directed against the whole of the latter half of the nineteenth century. The task of that age was to work out a theory of evolution and convince the world of its truth. This prodigious task it accomplished with marvelous efficiency. But in so doing it unduly exalted certain biological theories and unduly neglected psychology. It is necessary for us now to reverse that maladjustment and to free psychology from the undue domination of biological speculations. Darwin rejected the psychological explanation of the development of emotional expression, claiming that only the physical, mechanical, biological explanations are scientific. We must reverse that, and say that the utility of expression, which governs its evolution, is a psychological, not a grossly physical utility.

THE QUEST FOR OBJECTIVITY IN THE STUDY OF HUMAN PHENOMENA

BY BENJAMIN GINZBURG
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IF the path of wisdom has led from the more exact to the less exact sciences, and if, as Poincaré says,[1] man's early success in predicting the courses of the heavenly planets alone encouraged him to attempt more hardy adventures with his puny reason, should we then be petulant over the small measure of objective truth that attends our latest intellectual endeavors? Truth and objectivity are not necessarily identical in meaning, for besides the truth that is objectively demonstrable we also conceive of the truth that is intuitively understood. Thus an intelligent man may understand the psychological mainsprings of an individual's character without being able to demonstrate the truth of his understanding to a third person. The truth in this instance is grasped through analogy with one's own conscience, and is subject to the refining process of the reasoning intellect. This truth differs from the so-called objective truth only by the larger place left to what engineers call the "human equation," for not even the most objective truth attains the mark of one hundred per cent objectivity.

The school of behavioristic psychology, instead of frankly recognizing psychology as a subjective science, has undertaken to apply to the study of the human mind the objective methods of the laboratory which have proved so successful in the natural sciences. In so doing this school has necessarily limited its work to the observation of the external manifestations of the individual's activity. Now while theoretically it may be possible to constitute by this method a complete science of psychic phenomena, yet in practice so many facts are bound to be lost and non-observed as to render the method both incomplete and fallacious. In the early days of chemistry the absurd theory of phlogiston was invented to interpret and explain the new phenomena of gases which had then been discovered; this theory was quickly thrown into the discard when new facts were found which would not fit the old conception. But in behavioristic psychology we may find ourselves inventing phlogiston theories without much possibility of overhauling them by subsequent observation. For how

[1] H. Poincaré: La valeur de la science, ch. on astronomy.

long will it be, for instance, before we shall be in a position to make a precise and objective definition of the normal and the abnormal in human conduct? And without this keystone definition of so vital a subject how can any solid scientific structure be built up by the purely objective method?

In many ways more modest than the American and British schools of psychology, the French psychologists recognize the actual limitations of their science. Professor Janet believes that "a good collection of monographs and memoirs on special points might be the best service that psychology can render for the moment."[2] It is also his opinion that introspective psychological explanations are better than none. And in fact the entire French school is ready to accord a prominent place to introspective study. "Without it," declared Ribot in one of his last writings, "nothing can be commenced; with it alone nothing can be finished."[3] According to Rauh, psychology must not aspire too soon to explanation by fundamentals nor to any comprehensive theories which would of necessity remain too abstract and too general. He also issues a warning against physiological interpretations, holding that "the description and concrete explanation of the psychic reality, taken as a whole and not decomposed into psychic or organic elements — which are most often hypothetical — is the surest method,"[4] at least for the present.

Possibly the extraordinary scruples of the French psychologists are to be traced to the contact of these men with the other schools of contemporary French philosophy — in France psychology is regarded distinctly as a province of philosophy — particularly with the sociological group led by the late Emile Durkheim and M. Lévy-Bruhl. This school began its work in the nineties as a reaction to what it considered the excessive pretentions of the psychologists, and sought to constitute the notion of society as a positive reality capable of scientific study. It was an attempt to transfer the objective quest from the field of psychology to that of sociology. So successful were the initial efforts of this school that at one time it constituted the most vital force in French philosophy, drawing to itself a large host of young and enthusiastic students.

The researches conducted by this group of thinkers have shown the fallacy of studying the individual isolated from his social frame-

[2] Quoted by Parodi in "La philosophie contemporaine en France," p. 89.
[3] De la méthode dans les sciences, vol. 1er, La Psychologie, par Th. Ribot, p. 235.
[4] Revue de Métaphysique et de Morale, 1893, p. 502–505.

work. These men have gone even further and have attempted to prove that everything which we customarily regard as individual is social in its origin — from the language which one uses to develop his thought as far as the promptings of the individual conscience, held to be formed by social pressure. Both Durkheim and M. Lévy-Bruhl have insisted that the collective conscience is more fundamental than the individual conscience, which is really but a reflexion of the sociological organization of the collectivity. By affirming that all human phenomena have social causes, the sociological school makes them appear relative to the form of society and variable with it. Such a conception, in the view of an eminent French critic, M. Parodi,[5] tends to undermine our confidence not only in religion but even in logic and the very power of reason itself. For it is one of the achievements of M. Lévy-Bruhl[6] to have shown the existence of a mystical and prelogical mentality among the savages, a mentality which does not obey many of the most elementary principles of thought as it is organized in civilized society.

The method of the sociological school, very fecund in its results at first, has gradually exhausted itself by virtue of its inner contradictions. Under this method the authority of the individual conscience is abandoned in favor of the representations of the all-powerful collective conscience. But how are these representations derived? The answer of the school is vague on this point and contents itself with describing the representations as the expression of the sociological organization of the social group at a given period. When the institutions change, the collective conscience evolves, says M. Lévy-Bruhl,[7] using this term as a specific reality. But critics have not been wanting to question the real existence of this collective conscience. Institutions, morals, laws and customs exist, they say, but it is only by philosophic abstraction that we can declare them to be the expression of a hypothetical group conscience. Nor is this argument easy to refute.

With the death of Durkheim, the sociological school lost a great part of its prestige and driving power. Since the war only one book has come out bearing the stamp of the school — a treatise on responsibility, considered from its objective and legal side by Paul Fauçonnet. Otherwise there has been a marked tendency on the part of the rival

[5] La philosophie contemporaine en France, p. 152.
[6] Les fonctions mentales dans les sociétés inférieures.
[7] Ibid., p. 440.

schools of psychology and sociology to get together on many points. The comprehensive symposium on social psychology and sociology, organized two years ago by the *Journal de Psychologie*,[8] revealed the decreasing gap which now separates the two groups of theorists. In these articles, prepared as they were by the most eminent minds in their respective fields, there is a common recognition of the futility of applying a single method to the study of human phenomena.

Most illuminating is the paper by Professor Seignobos on the use of the psychological method in sociology. He couples the attempt to found a sociology uniquely based on the external observation of social facts with Marx's economic interpretation of history, and considers both as "a legitimate reaction against the abuses made in the nineteenth century of the method of spiritualist philosophy and literary studies. . . . For not only the individual cannot live isolated from society, but his individual activity is itself the product of the society in which he lives; it is society which furnishes him the contents of his mind and which even fashions the mechanism of his intelligence: the individual facts revealed by the consciousness suffice to explain neither the conduct nor even the contents of the consciousness of the individual; aside from the action of the inconscient or semi-conscient phenomena of the individual himself, his acts and his thoughts depend upon the action exercised upon him by other individuals."[9]

Professor Seignobos refuses to entertain the idea of a collective conscience or consciousness. The only conscience we know, he says, is the individual conscience; by analogy with our own we learn to appreciate what passes in the consciences of other individuals. The method of analogy is the method of introspection, and it is obviously incomplete. Equally incomplete is the objective method, for two human acts may be externally alike but different in their significance, which naturally depends upon the distinct values attached to them by the individual conscience. Faced as we are, therefore, by the dual, hybrid nature of human phenomena, we are asked to study them by an alternating method, half objective, half subjective or psychic. By this method we are "to pass constantly from the material world of facts into the psychic world of the consciousness and vice versa. "This alternating attack, without analogy in any science, will be repugnant to men habituated to the homogeneous methods of the

[8] No. 6–7, 1920.
[9] Ibid., p. 496.

natural sciences. Its aspect has not the rigor of science, and yet it is a rational method, for it adapts itself to the special conditions of its object; if it is hybrid it is because our social life is hybrid. It is even scientific in so far as science can be only reason extended and perfected by reflexion and technique. . . . It does not permit the positive prevision of the future, it does not show the only way in which facts will follow, but it permits negative prevision by indicating the ways in which they cannot go. And above all, it alone can make comprehensible the general mechanism of society, because it can alone explain the processes of contact, co-operation and transmission among the individuals who constitute it."[10]

The dual method prescribed by Professor Seignobos for the study of sociology lends itself to psychology as well. Introspection, we have seen, is regarded by the French school as the essential base for any kind of psychological research. If this view is accepted, it means that psychologists, too, must employ the "alternating attack," combining objective experimentation with subjective interpretation in the light of their knowledge of their own individual psychic activity.

But this is not all. The work of the sociological group, one-sided as it has been in many of its conclusions, presents nevertheless a challenge to the accepted premises of psychology. This challenge is clearly formulated by M. Davy, a disciple of Durkheim, in an article printed in the symposium of the *Journal de Psychologie*, to which we have already referred. "We cannot be satisfied," says M. Davy, "to postulate either as an hypothesis or as having evolved out of simple animality, a *human nature* comprising a certain number of unchangeable fundamental emotions and concepts; we must explain this human nature itself, and we must explain it as a function of the social milieu to which it adapts itself. It is from the sociological point of view that we must constitute a psychology of emotions and a psychology of the understanding."[11]

In concrete terms the sociologist's warning amounts to this: the psychologist must not consider as elementary that which is the product of social education. He must recognize that the psychology of the individual is formed by the pressure of physiological necessities on the one hand and by that of the social group on the other. The physiological necessities are both fundamental and relatively stable. The social environment continually changes under the influence of

[10] *Ibid.*, p. 513.
[11] *Ibid.*, p. 552.

material conditions and the psychological contributions of the individuals of the group.

From one point of view we should simplify the study of both sociological and psychological phenomena if we adopted the idea of a collective consciousness — the esprit de corps of the group as a real thing. But the gain for objectivity would be more than offset by the philosophical complications resulting from our hypothesis. When we grant the reality of a collective consciousness, as the extreme French sociologists insist, we are adding a third form of reality to the two already known, *viz.*, objective reality and individual psychic reality. The last two have by themselves given birth to endless philosophic controversy concerning the relation of the mind to the body, but the new form of mind proposed is even more mysterious than the consciousness of the individual.

Rather than have to resort to collective psychism, a number of psychologists in France, including the late Gabriel Tarde, have sought to constitute a science of interpsychology, embracing the phenomena of the interaction of individuals one upon another.[12] This science, which is practically nothing else than a new name for the recognized phenomena of suggestion and imitation, can offer but little light on complex collective manifestations such as language and religion. The ideas of suggestion and imitation form the base of the crowd psychology of the American and British schools. This attempt to treat a crowd behavioristically and to seek in it the key to social psychology is ill-advised. The influence of crowd suggestion upon an individual disappears very quickly after he has left its ranks and has taken up his usual occupations; furthermore, sedentary individuals who have never mingled in crowds possess a socialized psychology just like the rest of us.

The psychologist has to rely upon an imperfectly-objectified sociology, such as has been sketched by Professor Seignobos. The sociologist in turn, who must interpret his sociological facts by the psychological method, has to take his psychology largely as a matter of intuition and introspection. The two sciences overlap in more than one field, so much so as to raise the question whether a new name should not be found to express the synthesis of human psychic activity stretching from the physiological to the social. The two extremes can be studied objectively, for they deal with material facts — the human organism and the human institutions. Somewhere in the

[12] Cf. Ibid. article by G. Dumas: *L'Interpsychologie.*

middle of the arc stands our introspective consciousness, a tool that is invaluable for the special nature of the psychic sciences. With its aid we have already been able to understand the general phases of our mind activity, and we still can do more with it.

This does not mean that we should despise the objective methods of the research parties working up from the two extremes. We ought not even to abandon the hope, illusory as it may prove to be, of some day reducing this whole field to objectively classified knowledge. But we must beware of false objectivity, of ingenious mechanical hypotheses which do violence to our introspective imagination. We must at all times be able to check our results from all three points of departure.

So far from our psychic activity proving refractory to the methods of science, the study of human phenomena is now seen to be the very crown of our scientific research, profiting as it does by the accumulated results and by the perfected technique of the previously developed fields of learning.

THE PROBLEM OF THE INDIVIDUAL

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THE problem of the individual is of long standing. It is the center of so many human interests, is bound up with so many other problems that it very early forced itself into the foreground of philosophy. Far back in Hindu thought one finds the thinker returning again and again to the problem of the self. He tirelessly ponders its mystery, and subtly sifts experience for a clue to its underlying principle. The history of philosophy contributes much that is significant to the study of this problem. The journey from Plato to Royce and Bosanquet is indeed profitable to the student who is interested in the many phases of what is now known as the problem of the individual.

The problem, of course, may be approached in many ways and be treated upon many levels. I am convinced, however, that no discussion of the problem today is complete without recourse to the data of psychopathology. In the study of the causes that tend to produce a disintegration of the self, some light as to what its principle of snythesis is should be found. The disruption of a self is the result of enfeeblement of some bond. What the nature of this bond is should come to light in the study of cases of disorganization. Further, the development of incipient centers, the formation of various types of selves should reveal the presence of some constant factor.

By virtue of some innate ideational or cognitive structure, it has been claimed, the self is one. Its unity is, therefore, the result of a logical necessity. The thesis of this paper is that, in a larger measure than is generally recognized, barring the psychiatrists, the unity of the self is conditioned by the affections.

Descartes' cogito ergo sum is the classical statement of the rationalistic solution of our problem. Since that time rationalism has been forced to give much ground. So discredited has it become in certain quarters that the term "rationalization" has come to mean self deception. Such a statement, of course, does not pretend to be an adequate disposition of the rôle of reason. It probably has, however, a wider application than is generally conceded. B. Russell has recently characterized most philosophy, his own mathematical realism excepted, as dream projections. Metaphysics, according to

Russell has been largely devoted to "rationalizing" the world, giving it a suitable appearance. And Dewey asserts in his Reconstruction of Philosophy, p. 26, "that under the disguise of dealing with ultimate reality, philosophy has been really occupied with values embedded in social tradition." Everywhere today, the older rationalistic assumptions are being broken down. Reason is now seen as the instrument of life — not its essence. Darwin has made the approach to man biology, not theology. Biological considerations have pushed the feelings and instincts into the foreground, and have given them new meaning. The hidden and obscured forces in human behavior and experience are being brought into view. These have often been obscured by convention and theory. As Dewey has noted the meaning of experience is no longer derived from the attitude of passive contemplation. Such an attitude was the result of the idea that man's environment was unchangeable, something merely imposed. It was this assumption that lead the Stoic to hold the feelings and emotions as pathological, something foreign to his "true nature." His real nature was to be found in the exercise of a contemplative reason. And this view is not essentially changed by philosophy until its absorption of biology altered its psychology and its logic. Organic needs and ends are no longer considered unwelcome intrusions, distracting man from his proper concerns and preoccupations. To a large extent they determine his nature and define his ends.

Such is the general setting which our problem has today. It provides the approach to that problem, namely, what conditions or determines what we call an individual? Before proceeding with the problem two comments are in order. The first is that there is an old doctrine that what is real must, in some sense, be individual. This very old feeling expresses the element of truth in all realistic philosophy. And if realisms, old or new, seem inadequate to some of us it is because they fail to make clear what is involved in individuality. Idealism has always drawn its strength largely from this defect in realistic theory. Hence any discussion of this problem has general philosophic significance. The second comment is less generally recognized but for our context is, it seems to me, even more important, namely, that individuality is a matter of degree, and that when the term is applied to selves or persons this fact should be kept in mind. In other words, the term describes a tendency rather than an accomplished fact. Human life shows a tendency in the direction of individuality, a tendency that may be arrested or checked or even disintegrated.

Put in biological terms the idea is, perhaps made clearer. The organism, at this stage of its development, is, to some extent a plurality of functions or organs rather than a perfectly integrated unity. The work of synthesis is by no means complete. That the human organism has gone far with its task is true, but that it is short of its goal is a significant fact, and one that often throws much light upon some problems in regard to its behavior. And much of what it has won may be lost, with the result that, at such times, it is more helpful to view it as a plurality of competing and rival functions than as a unit. Just so, in psychological terms, what is called a self is always an ideal rather than an accomplished fact, an ideal that is in various degrees approximated but never attained. The term never reaches what is actually found, and all too often blinds us to the real facts. And when institutions and laws are built upon the implications of the term, as such, injustice is, often, the inevitable result. Let it be repeated, then, individuality stands for a tendency. And further, it is a tendency, in this case, of a psychophysical organism. The problem, therefore, can be approached from either the physiological or the psychophysical point of view. Since, however, man is a psychophysical being any analysis in terms of either point of view, will, of course, be partial and abstract. The preference for the psychological approach is based upon the fact that, at present, analysis can be carried farther in its terms, and to my mind, there seems no reason to believe that this will not be true for some time to come.

I am reviewing the problem under the stimulus of a contact with a number of cases of dissociations, cases in which the individual has been, in various degrees disintegrated.[1] Such data gives a concrete setting to the problem, and cannot fail to create a fresh orientation. I believe that an intimate acquaintance with phenomena of this nature quickly leads to misgivings as to the adequacy of traditional rationalistic interpretations of the self and its structure. Once conscious of the actual conflicts of human behavior, normal and abnormal, the futility of any abstract metaphysical principle or noetical unity is apparent. Individuality, in view of the actual lack of correlation, cannot be deduced facilely from such hypothetical entities. Such deductions with their overhead principles, assume as innate and structural a fact that often does not exist, and in so far as it does

[1] *A Divided Self*, Journal of Abnormal Psychology, vol. xiv, No. 4, pp. 281–291. *A Subconscious Phenomenon*, Ibid., Vol. xiv, No. 6, pp. 369–376. *Patience Wohrt*, The Psychological Review, Vol. 26, No. 5, pp. 397–407.

exist is a result rather than an a priori possession. These rationalistic assumptions have little relation to concrete behavior. Further, they presuppose what we shall have good reason to deny, that organization is primarily due to cognition, that synthesis is essentially the result of the cognitive element.

In cases of dissociation vital constellations may be observed to form within the frame or scope of the minds' abstract or general ideas. A latent complex emerges, becomes active, and a new determination is given to the formal cognitive background. Something has happened that lights up and vitalizes certain aspects of the abstract whole. Something has reached out and touched certain possibilities and they have become living tissue in a vital organization, whereas before they lay, pale and impotent. What is it that has quickened them into life, that has drawn them out from their impotent and empty generality? The intellect is powerless to give definite content to its own abstractions. Any experience as construed by it includes the possibility of an indefinite number of selves. Being without preference it has no disposition to realize any particular possibility. Its neutrality holds it to bare generality.

It would appear, therefore, that the intellect, as such, cannot provide a clue to this strange alternating of selves. The dislocating factor must be sought elsewhere. In fact no organization of experience is ever the result of reason alone. That the contrary could have been assumed is due to the fact that in making a synthesis reason is prone to hold that it is the result of an objective necessity. Reason may provide possibilities but their organization awaits upon the adoption of a given end. It is the end that determines how experience shall be organized. It is the end that reaches out and calls into life what is implied in its realization. That which does not enlist in the service of the recognized end is without power to make its claims felt.

In observing the transition from one self to another (I have in mind cases of dual or multiple personality) one is conscious of a shift of ends or system of ends. In addressing the new self you are confronted by a new set of presuppositions, at the heart of which will be found, as their generating cause, a new group of impulses or desires. These impulses engender an atmosphere of feeling that warms and illumines the world in their own peculiar way. They light up and warm into life what is congenial to them. About them is built up such a constellation of elements as is implied in their realization.

Withdraw them, as they are withdrawn when the self is displaced by another, and the constellation disintegrates and disappears. What was plausible now seems unreal. If pressed its validity may be conceded but since it leads the way to no desire the will is left cold.

All of this may be said, also, of the normal individual. Formal admission followed by actual repudiation is common enough. In the behavior of a dissociated group or personality, however, it is an outstanding characteristic. It is so obvious that it cannot fail to be instructive. It brings unmistakably into the foreground the fact that it is some community of feeling that, in the last analysis, determines what associations are formed and how stable they will be. Some form of sympathy binds particular processes together, and some common bond of feeling is the condition of any wholeness or unity in a given experience. In some community of purpose, therefore, we shall probably find the principle that determines what is individual.

The study of the causes of dissociation tends, I believe, to confirm the above statement. Always there is found some deep seated emotional conflict. Tendencies that are apparently irreconcilable press their claims. In this conflict each elicits all the associations that are congenial to it. If the nervous system has a high degree of stability the strain may be borne. As with the British political life strong conflicts occur but they do not disrupt it. A common tradition weathers the shock. But if an instability exists the strain, in time, undermines the integrative forces. The way out is the way that life, in its evolution, so often takes when incompatible tendencies appear together. A bifurcation, or division takes place. This reduces the tension, as when two occupants of a room finding themselves hopelessly incompatible agree to occupy it alternately.

Now these alternating selves are incompatible for the same reason that individuals may be socially or conjugally incompatible, and that is that their emotional life is discordant. Difference in thought as such does not arouse antagonism. It is contrary currents of feeling that produce friction, some divergence of impulse and instinct. And this is true of relations between individuals and between processes that fall nominally within one.

If, then, discord can be thus explained, if it is, fundamentally, a matter of the will (the term is here used in the broad sense), we have found, it would seem, the principle of individuation. Since, however, the will turns out to have been, originally, a group of diverse instincts the problem becomes one of understanding how, out of these diverse

tendencies, a synthesis can take place. Such a synthesis, we have now seen, must itself be in terms of the will, that is, affective tendencies. Only through some inclusive desire can an organization be won.

Now the distinctive thing in our effort to answer this problem is the rôle that is attributed to the affective element in all organization. Pathological cases provide a convincing analysis. There the different systems of ends become sundered into more or less distinct selves, and the sundering is due to the weakening of affective bonds. It will be apparent that what has been said is in line with McDougall's emphasis of the instincts as the primary source of motivation, and, in particular, his discussion of sentiment. I accept his position that the basis of human behavior is to be found in the instinctive responses. More recently Rivers in his 'Instinct and the Unconscious' has adduced striking proof of the significance and truth of this thesis. He has shown that most of so-called disorders are due to a lack of adjustment between the instinctive mechanisms, the substructure of experience, and its later acquired rational or social controls. Upon the fusion and harmony of these two factors, the given and the acquired, what is called normal behavior rests. Rivers is interested in explaining special disorders in terms of such conflict, and the consequent effort of adjustment. It is true, however, that these two factors, the various inherited mechanisms and the later acquired controls, make up the structure of the individual. There is a basis, and there is an acquired superstructure. Our problem is largely to determine what is the character of this superstructure and how it is related to the given and various instincts.

The emotions, as such, urge only the claims of their respective instincts. They rise and fall as the several instincts press their claims and reach their goal. In themselves they afford neither permanence nor order. Emotional responses are without fixed attitudes, nor is there in such responses any concern for the interest of life as a whole. It is obvious that upon this level there is nothing that is worthy of the name individual. Not until experience possesses a permanent structure is it the expression of a self. Now such a structure arises with the formation of sentiments. As sentiments are formed experience acquires order and permanence. How much order will depend upon the nature and strength of the sentiment. Even hate establishes some order. In imposing itself upon behavior it acts as a regulative principle. Adams in his discussion of the self places a similar construction upon the rôle of sentiment. "To say," he asserts (Idealism

and the Modern Age, p. 209), "that the self is something of a total, enduring structure is but to carry out the insight which results from the very necessary distinctions between emotion and sentiment."

It is, then, to the fusion of emotions with ideas forming sentiments we turn for light on our problem. That problem has now reduced itself to the question as to how the given and diverse tendencies can be brought under the organized control of an acquired disposition or attitude. The term sentiment is here used as Mr. Shand defines it, as "an organized system of emotional tendencies centered about some object." It stands for a relatively enduring complex of dispositions focalized about an object, idea or ideal.

Experience, to be individual, must be organized and stable. Now, unlike an emotion, a sentiment is a more or less permanent disposition. Its significance extends beyond its existence as an immediate experience. To have a sentiment means more than to be experiencing, just now, a particular group of affective states. It means, and this is the point, that future responses, of a specific character, are already prepared. It is thus that the self is prolonged into the future and acquires a being that cannot be compressed into a cross-section of its experience. A structure is formed that predetermines experience, and thus assures it that continuity which characterizes the individual, and for which we have been seeking the ground. This structure of sentiment, it is, that binds the various moments of experience together, and provides the frame that insures the self against the sporadic claims of impulse and the emotions. "It is only," says McDougall, "through the systematic organization of the emotional dispositions in sentiment that the volitional control of the immediate promptings of the emotions is rendered possible." (Social Psychology p. 44.)

I have said this structure predetermines, in a measure, experience. It is worth noting, and here I touch upon a point well argued by Adams, that it is never wholly revealed in experience. Experience uncovers now this, and now that portion of the self's total structure. So fragmentary is consciousness that most of the self is, at any one time, hidden from view. Consciousness plays over its surface but is not identical with it. More problems, I recognize, are involved here than the one that immediately concerns us. I have in mind especially the non-temporal aspect of such a structure. We are only concerned with the part that sentiments play in its erection, and this part, we have seen, is a vital one. In that they control not only the

experience of the present but the future also, they erect it. Further, since they are not given but acquired that structure is no mere resultant but embodies a measure of choice. To think of the self as a whole as a product is, obviously, to fail to make the important distinction between the emotions and the sentiments, and their respective contributions to its organization.

When observed at work within experience sentiments are seen to be so many vital systems, so many forms of sensitivity. Each animates all that touches it, and as a man moves from one region of experience to another these established dispositions operate as controls. Ideas that do not find themselves within any of these systems are impotent. They are without influence on conduct. Hence, in so far as education fails it is due to the fact that it has not established just these affective attitudes or dispositions. Getting acquainted with a man is really the problem of discovering his sentiments, their character and strength, the rest follows. And unless these have been caught both his thought and action are unintelligible.

Thus we see how a higher, more inclusive and permanent type of response may be erected upon the basic material of instinct. The plasticity of the instinctive mechanisms make such a superstructure possible. So plastic are they that their allegiance may be won to many ends. Without becoming less basic they are sufficiently malleable to conform to the demands of the acquired types of response. Their incorporation in a larger organization requires, however, that that organization be affective in character, and this the sentiments are. In fact a sentiment may surpass, in intensity, the primary emotions.

But a group of sentiments obviously leaves us this side of individuality. As such it provides only loosely federated systems, between which all degrees of conflict may arise. And dissociation may be due, although this is less common to a conflict of sentiments as well as a conflict between instinct and sentiment. However, that such an acquired complex disposition can be formed, and can dominate and qualify innate tendencies are significant facts. For if such tendencies can be organized the way is open. Once having released itself from the tyranny of instinctive responses experience is free to fashion its own structure. By freedom we mean it can now mould those responses about ends that have been selected. That which is built or acquired is secure only when it is re-enforced by those responses, when they find in it opportunity for expression. The danger of any

form of so-called spirituality which is based upon repression is now well known.

I return to the statement that when innate types of response are modified by sentiment experience is prepared to become individual, has already made a step in that direction. While this change implies the appearance of idea it means more than that. It means that a new type of affective organization has been formed. From this point on in the development of the self nothing will be found that is essentially new in principle. That development consists in the establishment of more inclusive systems of response and the unification and solidification of those systems. The term individual anticipates the completion of that process. It presupposes an affective solidarity, beneath which would be found a thoroughly integrated structure. All responses would then be whole responses, every act a representative act.

The ultimate organization of experience, therefore, demands an all inclusive sentiment, or such a one as would dominate, and in turn be re-enforced by, all others. The existence of such a sentiment would suffuse all experience with a common feeling, and as a permanent disposition it would afford an inclusive control. But even granting that various affective systems can only be welded together by some master sentiment there remains the further problem of discovering just what that sentiment must be. We have seen that it must be inclusive, and therefore highly complex, but such a statement still leaves its exact nature undefined. This fortunately, is not our problem. We have been interested in analyzing experience with a view to determining what psychological elements are to be found in its structure, and, in particular, that portion of its structure that is acquired.

If our analysis is sound we have before us the general nature of those elements which condition experience as it becomes individual. Those elements are more living and vital than what is generally understood by the term idea. They are more continuous with experience than are ideas, as such. And it is because of this fact that they can provide its tissue, and organize its processes. When we turn to psychopathology and study cases of disorganized personality these are the elements that are found to be affected. There is now a pretty general agreement as to what such a condition implies. I give the words of Dr. David Forsyth, a man of wide experience in dealing with such cases. "There can be no reasonable doubt" he says "that neuroses are essentially disorders of the emotions." Psycho-analytical Review, vol. VIII, p. 117.

It may be said that in relying upon sentiments to unify and stabilize the emotions ideas are pressed into service, and that they, in fact, organize experience. It is true that ideas are essential but only such as are felt ideas. Among ideas that which distinguishes the quick from the dead is that through the former an affective current runs. And it is to this affective current that the idea owes its power and influence.

I believe that most attempts to understand what it is that actually organizes experience have failed to appreciate the function of feeling. It has been my contention that the solidarity of a life is due, primarily, to its emotional concord, and that this is achieved by such a selection of sentiments as renders this unison possible. The hope, therefore, of individuality rests upon the discovery and creation of some master sentiment, the triumph of which is without repression.

PSYCHOMETRIC TESTS IN ESSENTIAL EPILEPSY

BY WINIFRED RICHMOND, PH. D.

ESSENTIAL or idiopathic epilepsy, by which is meant an epilepsy that is referable to no organic lesion, is defined by L. Pierce Clark, the leading epileptologist of this country, as a "life reaction disorder." (1) In such cases the characteristic features or mental stigmata are present in a more or less marked degree from birth or early childhood, and are but little affected by the presence or absence of the seizures. The epileptic is a psychopath whose psychopathy manifests itself in a hyper-development of the ego, an extreme super-sensitiveness, marked emotional poverty and a rigidity of ideation and mentation. Psychometric tests are of value in epilepsy in giving us a mental level and in indicating the presence or absence of deterioration and its degree. The writer feels that they ought also to give us some indication of the presence or absence of the characteristic stigmata, to show some distinctive features of the "great disorder," which might help us to determine its presence when the history of seizures is vague or perhaps altogether wanting, as frequently occurs with the younger cases.

In a consideration of tests from this standpoint we find ourselves not so much concerned with the distribution, that is, the scattering of responses through a number of years on an age-level scale such as the Binet, but with the character of the individual reactions and with the mental and emotional attitude of the subject during the examination.

The following studies, extending over a period of several months, were made upon a carefully selected group of epileptics in the Wyoming State Training School. Only essential epileptics, those who had shown the mental stigmata in greater or less degree since early childhood, were included. Though the cases are few, they range from the greatly deteriorated, at the lowest point where it was possible to get repeated testings upon them, to those deteriorated little if at all. The psychologist was in daily contact with each case, and had an excellent opportunity to observe improvement or the contrary in conduct and general mental condition, and thus to check up the test results by clinical evidence.

Case No. 1, John, aged 25, has been 6 years in the institution. He has had the seizures since the age of 5, but held his own fairly

well until late adolescence. He then became so quarrelsome and irresponsible that he had to be placed in the institution. He is now deteriorating very rapidly. On the Stanford Binet his mental age is 6 years 10 months, the distribution ranging from the 4th to the 8th years inclusive; his highest test is the comprehension questions in the 8th year. John makes a great effort to comprehend the directions and carry them out correctly, but his reactions are on the childish level. His poor motor co-ordination shows in an inability to copy the diamond, though he does all the other 7-year tests rather easily. He cannot name the 4 colors, nor repeat one of the sentences in the 6th year without error. He is extremely slow reacting, and his attention is so unstable that things have to be repeated to him again and again before he grasps them. His abnormal egotism shows itself in an overweening desire to talk about himself and his own affairs; he can hardly be induced to leave the Laboratory, so enamored is he of the chance to talk about himself. The association test — the Kent-Rosanoff series of 100 words — takes 20 minutes, an average reaction time of 12 seconds, and is remarkable for the number of individual reactions. He gives 26 phrases and 44 words with a frequency value of zero. Perseveration of one idea or one type of response is strongly marked; he gives "short" or "shortness" 19 times. Nine days later, after a severe nocturnal seizure, he gives 52 phrases and 29 zero reactions, many of which are sheer nonsense, though several are associations to a preceding stimulus or response — perseveration in the sense in which Kent and Rosanoff (4) use the term. Three weeks later he is still further deteriorated, though he has had no seizures for several days. His reaction time is lengthened, and there are now 12 words to which he can find no response. He has developed a fondness for the suffix "ness"; he says "darkness," "whiteness," "workness," "cartness," "boyikness," "sleepness," the first syllable usually being an association to a preceding idea.

Case No. 2, Blanche, is 23 years old and has been in the institution since she was 16. The seizures began at 11, but she was always a nervous child and never able to remain in school an entire year. In the Institution she is usually pleasant, but is super-sensitive and suspicious of others' attitudes toward her. She has the seizures during her menstrual periods, though under medication goes long periods without them. On the Stanford Binet her mental age is 8 years, with a basal age of 6 and a range of 3 years above that. But she barely misses a number of higher tests, such as the absurdities,

reading and report, and comprehensions in the 10th year, and the ball-and-field and interpretation of pictures in the 12th year; she is quite evidently considerably deteriorated. She cannot copy the diamond, and fails in counting backward and making change because of her delayed reaction times. She is anxious to please, and keeps asking if her responses are correct. Her work is not nearly so childish as John's, but shows many of the same characteristics; i. e., she is slow reacting, her motor co-ordination is poor, and her interest is not so much in the things she is asked to do as in the examiner's attitude toward her work; she has an abnormal, childish desire for approval. The association test again shows the delayed reaction times, the average being 8.64 seconds. She gives 13 phrases, but aside from this her reactions are not markedly pathological. In 6 subsequent tests she reduces her reaction time but is never able to eliminate the phrases.

Case No. 3, Harry, is an over grown fellow of 15, whose grand mal seizures have been more or less frequent since babyhood. He had a history of quarrelsomeness and truancy, and general incorrigibility at home and school, but gets on fairly well in the institution, except that his lack of interest in his environment makes it difficult for him to remember instructions or to profit much from training. His mental age is 9 years 1 month by the Stanford Binet scale, with a range of 6 years above a basal year of 6. He succeeds on the diamond but fails the design, and though his ball-and-field plan is correctly conceived it is poorly executed. His memory is not inherently poor, but his attention is so unstable that he makes poor use of it; he repeats only 4 digits forward though he does the same number backwards; he can define only 18 words in the vocabulary test, which gives him less than 8 year credit; he reads well, but can recall barely 8 items out of the possible 21. He is indifferent to the test, but wants to talk about himself and his own experiences. The association test shows delayed reaction times, with 2 phrases and 20 zero reactions. In 4 subsequent tests he reduces both the reaction times and the number of zero reactions, though both remain considerably above the normal. He shows marked sterotopy of the type of reaction; on the 5th test 44 reactions out of the hundred are still identical with those of the first.

Case No. 4, Lewis, is also 15 years old. His seizures began at 3 and are of a very severe grand mal type; they occur every 2 weeks except when he is under medication. Lewis is in the main a good-natured fellow, with marked emotional apathy and a tendency to

day-dreaming. His mental age on the Stanford Binet scale is 9 years and 1 month. This is the third Stanford he has had in the last year, and he barely succeeds in the reading selection, fails the design completely, and though his ball-and-field is creditable it is poorly drawn. On the association test his reaction times are delayed and he shows perseveration of one idea, besides several instances of association to the preceding stimulus or response. The next day he had a severe seizure at 11 A.M. and at 3.30 he was given another association test, which shows the same peculiarities in a more marked degree. During the next 4 weeks he had 5 tests, in only one of which he succeeds in lowering his reaction times appreciably, and the last of the series has but 56 different reactions as against 69 on the first test.

Case No. 5, Mary, aged 17, has had petit mal since she was 5 years old, but developed grand mal about a year ago, shortly before being sent to the institution. She has frequent petit mal and an occasional grand mal for several days preceding and during her menstrual periods, and petit mal occasionally during the intervals. At first glance she shows practically none of the epileptic stigmata; she is quiet and fairly good natured, apparently unselfish and not at all sensitive; but she is stubborn, will do petty pilfering, lie until cornered, and has been sexually promiscuous since she was a small child. Emotionally she is still a child, and her rigid attitude of mind is shown in the fact that, though she is quite capable of learning as far as memory and comprehension are concerned, she insists upon doing her household tasks in the manner to which she has been accustomed. Her Stanford age is 10 years and 5 months; the only tests she can do above the 10th year are the picture interpretations and the clock problems, and she misses the absurdities in the 10th year. Her work is childish, not nearly what one would expect from her appearance and manner; during the examination she was self possessed and co-operated well, but was nervous, her voice and hands shaking. The association tests, given at varying intervals over a period of 9 months, show curious fluctuations: the number of zero reactions rises and falls with a fair degree of regularity, completing a cycle in from 4 to 6 weeks. It is highest during the time of the menstrual seizures, and lowest about 2 weeks before that time; ad interim seizures seem to have no effect upon it. This is quite in accord with Mary's institution history; during her menstrual periods the seizures leave her more or less confused and stupid, but in the intervals there are no apparent after effects.

Case No. 6, Harold, aged 13, has been in the institution 6 months. He has had petit mal seizures since the age of 18 months, but they have been very infrequent until within the last year. He has always been an exceedingly difficult child; has been subject to temper attacks — psychic equivalents — in which he was wholly unmanageable at home; he is an egregious egotist, is extremely sensitive to remarks or actions directed toward himself, but has small regard for others' feelings; though he has a bright and active mind, his field of attention is so narrow and his interest in his environment so slight that his general information is quite poor; he reached the 6th grade in school at the age of 12 after repeating the 5th grade. He was sent to the institution only after he became impossible at home. In the institution he has had a series of ups and downs; the seizures have been quite frequent, usually a matutinal petit mal for several days, then a series of 5 and 6 in a day, culminating in grand mal; after which he is free from seizures for a varying number of days, from 3 or 4 to 2 or 3 weeks. During these free periods he is very apt to have the epi-gastric aura. He was tried under luminal, which controlled the seizures but he developed an acute mania, in which he shouted, sang, and swore nearly all the time, and became violent if crossed in anything. When not under medication he is often very unstable, hyperirritable, and unreasonable, but is amenable to discipline and responds to training. On the whole his conduct has shown considerable improvement since his admission.

By the Stanford Binet scale his mental age is 11 years and 10 months, the responses ranging from the 9th to the 16th years inclusive. His vocabulary is below the 10-year level, and though he reads readily he makes errors and cannot recall enough items for credit. He can repeat 7 digits backward but only 6 forward. He shows no lack in comprehension or in ability to reason when he has the necessary data, but his mental grasp is shallow and his attention is so unstable that he fails on tests that are easily within his ability. His drawings show good motor co-ordination, but the test was given on one of his "good" days; there are other days when he cannot control his movements without exhausting effort. The association test, given on the same date as the Stanford, shows a number of phrases and perseveration of one type of response, and delayed reaction times. During March and April a series of tests was given; he was having petit mal nearly every day, and had one series of 9 seizures in 24 hours, some of them severe grand mal. However, the tests approximate

the norm quite closely, even on the days when his convulsions were most severe. His reaction time is lowered, until it is but little more than an average of 2 seconds, which is as well as the average normal subject can do; and pathological material is practically nil. This is quite in accord with the clinical evidence of his improvement.

Case No. 7, George, aged 24, developed grand mal attacks about 3 years ago. He had had no previous convulsions. The seizures are relatively frequent, but much less so under medication. He was a bright boy, learned readily in school, was not quarrelsome, nor did he have tantrum episodes. He is, however, very egotistic, with grandiose ideas concerning himself, his home, and everything with which he is connected. Emotionally he is quite childish; he has never had a love affair, and is childishly attached to his home and his parents. His Stanford Binet age is 14 years and 7 months, the responses ranging from the 9th through the 18th year. He has a poor vocabulary, receiving only 10-year credit for definitions. He is able to repeat 7 digits both forward and backward; he is evidently a good visualizer, accomplishing the code and the cut design, but he can reproduce only part of the design in the 10th year. Comprehension and reasoning ability are unimpaired, and memory is good; but his attention is poor; he must be stimulated and his interest aroused, and even then he fails tests well within his ability because he overlooks essential factors. He is very slow reacting. Nine association tests, given over a period of 8 weeks, show a progressive decrease in the phrase type of reaction, though the number of zero reactions remains high. There is perseveration of words and phrases relating to himself. His reaction time decreases also, to a remarkable degree; in the first test his average time on the 100 words was 19.52 seconds, and was slightly above or below this for the first 6 tests; on the 7th it suddenly dropped to 3.6 seconds; on the 8th it was 3 seconds, and on the last 3.17 seconds. These last 3 tests were accompanied by a great improvement in his general condition; he soon after left the institution.

DISCUSSION

The foregoing tests have many features in common. Perhaps the outstanding feature on the Stanford is the disorder of attention. In every one of the 7 cases it shows plainly. Not one of them but has to have directions repeated, gets confused and needs extra explanation, fails tests well within his ability because he forgets part of the

aufgabe or fails to notice all the factors involved. Thus case No. 7 reproduces only the first figure of the design, explaining that he forgot to look at the second; case No. 6 reproduces the lines of the code correctly but omits the dots, and cannot recall what he has read because, as he says, he wasn't paying attention, only trying to read well; No. 4 doesn't know the date, "just don't pay no attention to it." Every one who works with epileptics knows this characteristic; its origin is probably not so much intellectual as emotional, i. e., the epileptic's interest in his environment, except in so far as it relates to himself and the satisfaction of his own needs and desires, is slight.

Poor motor co-ordination shows in the drawings, and is greater or less according to the degree of deterioration; only case No. 6 succeeds in all of them. The vocabulary is consistently poor; even cases 6 and 7, from good homes and excellent schools, possess a small vocabulary. Not one of them is specially interested in the test itself, as the normal child or the straight defective is; they are all interested to know how they are doing or what the examiner thinks of their performances, and all are childishly eager for praise.

But the association test is perhaps a better gauge of the epileptic's mental condition; all show delayed reaction times in comparison with the normal subject, and an abnormal number of zero and phrase reactions. The phenomenon of perseveration, either the repetition of one or another word or association to a preceding stimulus or response, appears in all of them. These abnormal types of reaction tend to decrease and the reaction time to lessen as the subject's general condition improves. Several investigators have noted these tendencies as characteristic of epileptic reactions to association tests. Kent and Rosanoff (4) in their monograph report tests upon 24 subjects, in which they found "the dominant characteristic, so far as shown in the test records, to be a narrowing of the mental horizon manifested firstly by a tendency to repeat many times one or another word, and secondly by an abnormally pronounced tendency to make use of non-specific reactions or particles of speech. Occasionally other abnormalities are noted, such as perseveration or distraction." P. 47. The non-specific reactions and parts of speech are relatively infrequent in our material, but only one of our cases shows advanced dementia, and the above mentioned investigators state that many of their cases were of this type. Hahn (3) found lengthened reaction times and a tendency to perseveration characteristic of epileptic subjects, while Clark and Mileau (2) conclude their study of psychometric

tests in epilepsy with the statement that "the degree of perseveration and the length of reaction time are the main criteria for determining the presence and amount of mental deterioration." P. 6.

SUMMARY

1. Essential or idiopathic epilepsy is a "life reaction disorder," with characteristic mental stigmata; psychometric tests, in addition to a mental level and the indication of the presence or absence of deterioration, ought also to give us some indication of the characteristic mental attitude, thus enabling us to suspect the presence of the "great disorder" when the history of seizures is vague or entirely absent.

2. The present article reports the results of the study of a group of 7 essential epileptics, so selected as to range from the greatly deteriorated to those deteriorated but slightly if at all. The Stanford Binet was used, and repeated association tests were made with the Kent-Rosanoff series of 100 words.

3. Disorders of attention show in every case on the Stanford. All have to have directions repeated, get confused and need extra explanation, fail tests well within their ability because they forget part of the *aufgabe* or fail to notice all of the factors involved. Poor motor co-ordination shows in nearly every case, and is greater or less according to the degree of deterioration. The vocabulary is consistently poor, even in the cases from good homes.

4. Interest in the test itself is subordinated to desire for approval and interest in the examiner's attitude toward the subject — an egoistic attitude.

5. The association test shows in every case delayed reaction times and an abnormal type of response, perseveration of one idea or association to a preceding one. These tendencies lessen as the general condition improves.

6. The mental condition, as shown by the tests, bears no essential relation to the frequency or severity of the seizures.

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PSYCHOPATHOLOGY. By Edward J. Kempf, St. Louis, C. V. Mosby Co., 1920. Pp. 762.

I considered the horns, and, behold, there came up among them another little horn, before whom there were three of the first horns plucked up by the roots: and, behold, in this horn were eyes like the eyes of man, and a mouth speaking great things. Daniel vii: 8.

For its suggestion and stimulation, this book is no unwelcome reinforcement to the firing line of psychopathological progress. It does not systematically cover the range, the author's special interests being in functional, "biogenetic" types of conduct disorder. He now applies, in thoroughgoing fashion, his views of the autonomic functions in their relation to mental maladjustment. The fundamental conception of adaptive behavior is that stimuli cause the autonomic apparatus to react by giving rise to affective processes which in turn stimulate to appropriate overt behavior. The striped musculature is the servant of the autonomic, which has reared it to minister to the autonomic's needs; the god is most literally "in the belly"; the instincts figure as *segmental cravings* the conflict of which is *always* the psychopathologist's problem with the individual case. His definitions of various terms descriptive of instincts and emotions (as fear, shame, love, disgust, grief), are particularly stimulating. One will not be surprised that the mechanism of conditioning plays a large, deservedly large, part in his formulations. His view of hypnotism is based upon it, and very similar to that put forward by Ferenczi. The psychoses are symptomatic of suppression, repression and dissociation of segmental cravings, caused by fear of the cravings; the maladjustment of which makes the "vicious, secret intriguer, the pathological liar, the drug habitué, the shyster," etc.

The reasonableness of a hypothesis that these conditions arise through instinctive conflict is not in dispute, but the question may fairly be raised of how fitted the autonomic system is to bear the interpretative load that Kempf puts upon it. Do the postural tensions present any specially coercive percepts to consciousness? Rare indeed is an emotion carrying the organic discomfort of a healthy, active boil. Psychology has somewhat overlooked the point that the "mysterious universe of moral suffering" is relatively independent of sensory concomitants. The stress which Kempf lays on this, though under a different formulation, is not the least fortunate of his contributions. One must agree with Kræpelin, that mental pains are, regrettably, more intense and lasting than mental pleasures. The sensibility thereto is variable, but seems more evolved among the more complex civilizations. Their intensity is certainly of no inferior order to that of physical pains, and the physical hell has not unreasonably been largely abandoned for one of mental suffering. In such cases the organic involvement is not imperceptible, but it is trivial.

There are other points which seem to make autonomic reactions unsatisfactory vehicles of affective responses: It is not clear that differential responses occur with widely differing emotions. Affective reactions seem to occur (Nakashima) within a shorter time than the latency of autonomic responses. These difficulties may not be insuperable, but they are not surmounted, and no scientific formulation of affectivity reaches its goal that neglects them.

A distinctive feature of the book, and one which it is to be hoped Kempf will find time to develop in more systematic detail, is the interpretation of behavior of the primates in the light of psychoanalytic conceptions. Attention is drawn to the point that the course of many physical diseases may be influenced by conflicts of the autonomic level through their influence on the blood supply.

It had been observed that catatonic syndromes might run a course more favorable than other schizophrenic conditions. Intermittent forms of dementia præcox are seen which, between attacks, resume self-support at progressively lower levels. Kempf speaks of cases that "even attain a more matured and efficient level than they had reached before." Though this runs counter to the classical conception of catatonic conditions, constructive psychoses are by no means inconsistent with the psychiatric influences from which Kempf derives his remarkable background. Such cases are most important and should be reported whenever practicable. Many circumstances may simulate the effect of a constructive psychosis. Only critical scrutiny makes such interpretation acceptable, and the well observed clinical material recorded by Kempf does not clearly exemplify what he means.

The autonomic complex apparently means more to Kempf personally than to the rest of his ideas. A thoroughly functional view of behavior disorders can be maintained without it. The immediate effect on the book is to encumber the style and seriously lessen intelligibility even to the technical reader.[1]

Physiological considerations used by the author to strengthen the conceptual structure are really a source of weakness. In his introduction he first postulates that "emotions are cravings that have their origin in the tensions and movements of different autonomic (visceral) segments," and then states that this conception "is amply supported by physiological data" (p. 6). These supports seem to be (1) Sherrington's theory of postural activity of muscle and nerve; (2) The theory that skeletal muscle is innervated by the sympathetic nervous system to cause tonic or postural contrac-

[1] ". . . He had waded with conscious effort into the terminology of the subject. He lost himself amongst advancing semicircles, left- and right-hand quadrants, the curves of the tracks, the probable bearing of the centre, the shifts of winds, and the readings of barometer. He tried to bring all these things into a definite relation to himself, and ended by becoming contemptuously angry with such a lot of words and with so much advice that seemed to him all sheer headwork and supposition without a glimmer of certitude." *Joseph Conrad: Typhoon.*

tion, as put forward by Langelaan and De Boer; (3) The work of Cannon on the physiology of emotional states.

The propriety of using the first of these theories is indisputable; it is probable that our muscle tensions do have an affective influence; but when the author makes two direct misquotations of Sherrington in the same paragraph our confidence is shaken. Of necessity we doubt his psychological interpretations when he obviously does not understand the physiological data on which they are based. For example (on page 21) he says that "practically all" of the skeletal muscles are in a state of constant postural contraction to overcome the influence of gravity. Any one who has worked with decerebrate preparations knows that the muscles functioning in the anti-gravity reflex are a definite group comprising distinctly less than one third the striped muscles of the body. Moreover, we are unable to find where Sherrington has stated the facts as quoted.

In the same paragraph we find a statement that "the rate of the impulses maintaining postural tension varies from 40 to 90 per second (Sherrington)." A careful reading of Sherrington's paper by any one familiar with electrophysiology shows that Kempf here makes a gross misinterpretation, for Sherington merely states that a number of observations have shown that "in postural contraction the *muscle* exhibits action-currents" at this rate per second. Kempf draws the wholly unfounded inference that the rate of action-current in muscle is the same as the rate of the nerve impulse. If we turn to his earlier work "The Autonomic Functions of the Personality" we even find him saying that these action-currents *produce* a stream of proprioceptive impulses. There is, of course, absolutely no physiological evidence that action-currents produce or in any way represent nerve impulses; they are merely electrical concomitants of muscular contraction, or of any other form of biological activity. To say that they produce a stream of proprioceptive impulses, is not only fanciful, but is an example of how the author, reading in a field with which he is not familiar, misinterprets physiological data and then makes use of them to give weight to his psychological theories. It might be said that these two points selected for specific criticism are details, and do not affect Kempf's general theory. They at least point out his physiological inaccuracy.

The second support on which this analysis of psychopathology is founded is that autonomic neurones "maintain the postural tonus of the striped muscle cells (Langelaan, De Boer, Sherrington)." The facts are these: Anatomists have seen free nerve endings in the sarcoplasm, which they have suggested might be sympathetic. De Boer, working on frogs and cats, found evidence that cutting off the sympathetic innervation of a limb decreased its muscle tone. Langelaan, in a long series of experiments, demonstrated that there were two elements in tonus — a contractile and a plastic. This he thinks substantiates the work of De Boer; but Langelaan did no experiments

directly bearing on sympathetic innervation of skeletal muscles, all his evidence is indirect, and though important and interesting, cannot be considered as corroboration of De Boer's observation. In fact four observers have since repeated different parts of De Boer's work and none of them have been able to reproduce his results. Finally, to make Sherrington a backer of this theory of De Boer's is unfair; nowhere in his writings are we able to find a statement that he believes in the autonomic innervation of striated muscle. He makes suggestive comparison between the tonus of smooth muscle and of striated muscle, but invariably considers that as yet these are mere analogies.

Finally, Kempf uses freely the work of Cannon on the physiological phenomena associated with emotional states. Also Mosso's experiments on the tonicity of the bladder. These experiments are, in general, well quoted, but here again we see a distinct tendency to take an experimental result, draw an analogy to it in a clinical case, and consider this process of analogy as *proof*.

The conduct disorders dealt with are largely regarded as panicky or otherwise psychotic reactions to sexually perverse tendencies, notably homosexuality. Kempf is a prophet of their dynamic import, but we are still in much darkness as to how far these trends are dynamic in the psychoses, or how far their appearance may be due to an upsetting of the ordinary levels of consciousness and unconsciousness by some organic factor (which may be endocrine for all we know). Kempf's standpoint derives little support from the observations of Havelock Ellis, whose histories one can hardly read without wonder at the amount of psychosexual racking the human mind will stand. Is it not probable that for every one who weaves homosexuality into a psychosis, there are a dozen who get along with it in comparative comfort? "It's all right if you do it with a good conscience." How far the special sensitiveness to the topic that is seen in psychotic cases so colored is a matter of original nature, special experience or incidental physiology, is something about which no one knows very much.

Under psychoanalytic influence, the concept of homosexuality has broadened and become more vague. Conventionally it involves organic relationship between the parties. Under psychoanalysis there has been a tendency to merge into it all attachments between persons of similar sex, whether or not organically conditioned. This is bad, because their social significance is entirely disparate, and the two processes have psychologically little in common. The world is well and fortunately supplied with attachments, confidence, loyalty and service among persons of the same sex, men probably more often than women, where there is no evidence of organic conditioning or reason to suppose it. The great co-operative efforts of civilization are accomplished by means of them, and among them the affective reactions associated with the conventional "homosexuality" have no place.

Such attachments do have a sexual element, that is, they are conditioned by a sexual factor, in that they are different from those *likely* to be formed between persons of opposite sex.[2] Socially they are a necessity, and the casuist could make a plea for their ethical value, as compared to those requiring organic reinforcement, that takes no small dialectic skill to refute.

The concept of symbolism is one that figures largely in any work of this kind. While few can doubt the importance of the process, the actual determination of unconscious symbolisms is in the prescientific stage. There is no accepted definition of what is meant when one thing is said to symbolize another, and the entire fabric of thought on the subject is correspondingly loose. On p. 107 of this book is pictured a not extraordinary looking boulder, with the information that it is a prehistoric ceremonial statue of a phallus as a god, erected *pour encourager les autres*. If the stone be really prehistoric, how much of this account of the sculptor's mental processes is knowledge and how much speculation? It should be clearer whether the complicated ideas ascribed to various paintings and sculptures, some prehistoric, many otherwise, are considered to be actually in the consciousness of their authors or representing unconscious repressions. How far may one say that *alpha* symbolizes *beta* when one knows next to nothing of the mental processes of *beta's* author, and knows only that it suggests *beta* to observers who see *beta* in everything from *alpha* to *omega?* It is not as though the case for symbolism were always in such logical straits. The parallel to Bœcklin's *Toteninsel* is instructive enough as regards the patient, though it is speculation as to how much of this was in Bœcklin's mind. And when dream-speech alludes to a goatee as a "penoid beard," or the drawing of an ecstatic female is attended by a serpent, some birds, and phalloid bunches of grapes simultaneously, the reasoning is more persuasive. One is now clearer as to how the emissaries of Moses hit upon their apt symbol for the fertility of the promised land.

But to dérive from Rodin's *Eternal Spring* the expression of "constructive power of uncensored heterosexual love" is a left handed compliment to the sculptor's insight. Practically speaking, a rachitic and ophthalmic generation is born of uncensored heterosexual love. Indian legend pictures the matter in accord with the more current and satisfactory conceptions: In Paradisian days "Life was one perpetual honeymoon. . . . The villages were deserted, while the woods and bushes were populous with wedded and unwedded lovers. Kitch' Manitou looked on the proceedings with disapproval. . . . The corn and the rice grew rank and uncultivated, while the lynx, the wolverine and the wolf committed unchecked depredations among the weaker forest creatures." To put a stop to this neglect of the business of life, "Kitch' Manitou took counsel with himself and created Saw-gi-may, the mosquito, to whom he gave as dwelling the woods and bushes.

[2] The *Taras Bulba* of Gogol pictures a crude form of such association with special clearness.

. . . 'Him come back, go to work.' "[3] The mosquito symbolizes the censor, who prevents the libido from being dissipated through primitive organic channels, and allows it to be sublimated for the work of civilization.

There is no inherent harm in seeing in an artistic creation something the author did not necessarily put there. The difficulty comes when the psychoanalyst ascribes it to him because he and a few colleagues oversensitized to that special topic can make themselves see it, and there is no Costa Rican Bill Stumps to rise from prehistoric sepulture and deny them.

When a man of science addresses himself to his colleagues, it may be his obligation no less than his privilege to paint the thing precisely as he sees it. His colleagues are responsible for discarding what is useless, and building what is valuable into the general structure of science. When on the other hand a man of science addresses himself to those from whom criticism is not to be expected, he is much less free to "say what you think without thinking what you say." His fitness for his task is affected not a little by his self-criticism and his readiness to balance the views of others against his own. To address oneself to a wide circle of critically incompetent readers, in *obiter dicta* upon highly unsettled propositions, is not the procedure of science seeking to instruct, but of prophecy seeking to convince. Consciously or otherwise, this is the tendency of the present book. It is accordingly subject to criticism not only concerning its accord with other data, but also with regard to the probable reaction of the various groups to whom it is offered.

With the history of "Science and Health" in mind, one is cautious about asking more of a prophet than of a man of science, in the way of literary form. But if words are children of the pen, this book is a Massacre of the Innocents.

It is commonplace that the persuasiveness of doctrine does not depend in the first instance upon relation to reality. It depends more especially on the conviction of the prophet, and its appeal to affective needs of the hearers. Buddha is followed by hundred millions, Mahomet shook a world, with doctrines certainly no closer to reality than those of this book. So far as assurance is concerned, neither of these gentlemen appear to have infinitely much upon our present author. But the content of the latter's appeal is hardly so effective, partly because it is complicated, and partly because it figures the *summum bonum* as a "comfortable" tonus, the avoidance of evil rather than the pursuit of the best, a less dynamic formulation than one would expect from Kempf, and one less conformable to the occidental, twentieth century idea. Most persons would even prefer that other Prophet's Paradise, whose essential feature is the continued upsetting of autonomic balance, with immediate and continually repeated readjustment in reactions to segmental cravings at various levels.

Kempf promptly warns away the sensitive prudish, therewith inevitably summoning the "curious" to the feast. Panurge might build the walls of

[3] White, S. E.: The Forest.

Paris from the illustrations. It is among Kempf's credits that he affects no sentimentality of the "painful to write such things" order, but he carries his naturalism so far as to obscure its legitimate purpose. There is, conceivably, an unholy satisfaction to be derived from spreading a mess of "sexual filth" in front of a squeamish reader, and rubbing his nose in it. But psychosexual freedom does not lie that way. One recalls the fable of the sun, the north wind, and the cloak. Psychosexual freedom is not a function of language.[4] Hypersexualized art, talk and ruminations represent a *Partialtrieb* not less than organic masturbation, and it is perfectly possible for a share of the libido to become fixated upon them to the detriment of biological function. All the smoke of "sex-resistance" is not without any fire. Popular reactions against ideational eroticism are not more intense, proportionally, than against organic homosexuality, and the two prejudices have a similar rationale. Suppose a historian of the Inquisition to pad his text with minute and circumstantial details about the tortures and sufferings of its victims. The appeal of such a book would be essentially morbid, no matter how painstakingly accurate its collocation of data. The central fact is that ideational appeals to emotion, as such, are unhealthy (Cf. Wm. James, *Principles*, I, p. 125), psychosexuality being specially sensitive to such appeals. Some time since Bleuler[5] advanced an idea that "sex resistance" was an autistic derivative of resistances to masturbation. It is quite reasonable to extend this idea to psychic masturbation. Bleuler's theory then becomes that sexual reactions are considered as such unhealthy through sexual ideation as such being actually so. It seems a view suitable for at least partial application. The question is, of course, what psychosexual freedom means to different authorities, and whether, as we may be too prone to assume, it can be formulated as a really desirable goal. It is possible that it cannot be had without a de-emotionalizing of the topic so thorough as to carry its own social dangers.

Kempf is no minor prophet, but when the ends of life are figured in autonomic terms, the prophecy is of regression to Eden. A people that tried to live by such principles would be destroyed or enslaved by another with greater sublimating capacity. As soon as social organization begins, the requirement for leadership is an excess of libido over and above what is satis-

[4] A special gain to one of the reviewers, is perhaps an additional element of insight into psychoanalytic dream-symbolism. The episode in question was a drowsiness symbolism, similar to some described by H. L. Hollingworth, and arising very early one morning during the period while occupied with this review. The reader is perhaps acquainted with a variety of scarabæoid beetle, which encases its eggs in pellets of refuse, essentially dung, in which they are protected from the vicissitudes of the environment. A smoking room myth makes these pellets a remedy for constipation. Occasionally their makers may be seen using their heads against them as levers, butting with the full force of the vigorous little bodies, to transport their precious cargoes to a place of safety. With its central core of verities, the character and thickness of their incrustation, and its value for psychoanalytic *catharsis*, the present volume found a not un-Freudian archetype in the burden of the lowly "tumble-bug."

[5] Jahrb. f. Psa. u. psp. Forschungen, 1913, 5, 442-452.

fied or satisfiable at organic levels. "A certain amount of fleas," remarks the rustic philosopher, "is good for a dog"; or as a South American statesman has more broadly phrased it, "The first step in progress is to need something." Baucis and Philemon are not the stuff of which leaders are made. Again the biological value of the "resistance" censor.

Humanity is said to dislike a "teacher" and crave a "brother." It is a mark of the psychopath that instead he craves a "father"; an *Uebertragungsobjekt* that will relieve him of his crutches by carrying him rather than enabling him to walk alone. The ability to be a *Vaterersatz*[6] is no small factor in successful practice of "psychopathology," though many writers, Kempf among them, stress the point of not allowing the transference to become fixated at this level, to the frustration of the best work of psychoanalysis, the construction of an autonomous personality.

Consistent with the rôle of prophet rather than scientist, is the fact that Kempf's views of things as they ought to be are more persuasive than his views of things as they are. There are some well founded remarks on education. He is also more readable at such times, being taken away from his jargon. If there were maintained throughout the book the level of the last two chapters, the published advertising would not keep one on the lookout for marginal weather forecasts, and a list of eclipses. One takes away the impression of valuable ideas grasped well enough for personal use perhaps, but not well enough to put them acceptably before others with all the effort that has been made.

Somehow the author seems to have been conditioned with a vigorous reaction against *vieilles têtes*, a "negative Nestor-complex." The period from 45 onward is one of "decadence"; anent wars, "the arteriosclerotic, decadent male, feeling his loss of potency, compensates with . . . keeping the maturing males subdued. Their policies force the youths to oppose one another and kill each other off in the name of the fatherland." He likes the idea of sending men over fifty into battle first, or pensioning and retiring like the *struldbrugs* of Swift, the "senile arteriosclerotic males," when a certain state of physiological deterioration is reached. For the author's sake, if not for psychopathology, it is well that this view of things as they ought to be is somewhat distorted. There is excellent promise in Kempf's energy, breadth and sincerity at this stage, joined to the maturing judgment of his own period of "decadence."

In sum, the autonomic theory of behavior is not unsuitable for technical discussion, but quite so for an offering general and conclusive. Writing

[6] "Die neurotische Angst der jüdischen Religion . . . . gebiert aus sich . . . das Zwangszeremonial des Neurotischen. Ven ihm befreien sich nur die Propheten, denen die Identification mit Jehova, die vollkommene Sublimation, geglückt ist. Sie werden zu Vätern des Volkes." Jung, Bedeutung des Vaters, Jahrb. f. Psa. u. psp. Forsch., 1909, 1, 170.

no more than personality should have to be coarse in order to seem "virile."[7] Neither does the intellectual aloofness appearing in the volume give its ideas the easiest way of assimilation. It is difficult to see that constructive criticism can encourage the author to persist in such tendencies of the present volume. "You can do anything once."

F. L. Wells.
Stanley Cobb.
Harvard Medical School

Benign Stupors, a Study of a New Manic Depressive Reaction Type. By August Hoch, M. D., late Director of New York Psychiatric Institute. New York, The Macmillan Co. Pp. 270. Price, $2.50.

This posthumous book of Dr. Hoch represents clinical studies made during his directorate of the New York Psychiatric Institute, and formulated and interpreted after his retirement on account of ill health in 1917. Death occurred before the work was completed, but his notes and manuscript were in such form that Dr. McCurdy, his intimate friend and associate, has been able to finish the book, modestly disclaiming other than a literary contribution.

Dr. Hoch's first aim has been to throw light on the shadow land of functional psychoses lying between Dementia Precox and the Manic Depressive group. He selected stupor for his theme, representing as he saw it, a definite clinical entity found in this field. He has attempted by following a large group of cases over a period of years, to bring out practical features which distinguish the benign type from the malignant. In addition, with the aid of modern analytical psychology, he has formulated hypotheses for the mechanisms concerned in this condition which should be of much value in understanding psychotic reactions in general.

A large number of cases of benign stupor were exhaustively studied by Dr. Hoch and followed through to ultimate recovery; and much of the book is taken up with comprehensive case histories of these patients. He refers to Kirby as first pointing out in a paper published in 1913, that the catatonic syndrome of stuporous type does not necessarily imply a deteriorating process, and many such cases show sufficient relationship to the affect group to be classed with them rather than with schizophrenia. Taking up the work at this point Hoch sought to go deeper than the descriptive level and probed into the stupor reaction with the purpose of demonstrating just what sort of failure of adjustment is by it represented. Perhaps the outstanding feature of his work is the concept that the symptom complex centering around apathy may be as distinct and pure an affect disorder as those characterized by elation, depression or anxiety, and that reduction or absence of affect is often a primary condition, and not the result of schizophrenic dissociation.

[7] Nor always successfully. In the *Psychological Bulletin*, vol. 17, p. 401, the author is stigmatized as "Miss Kempf."

He defines benign stupor as a recoverable psychosis characterized by the four symptoms, 1. apathy, 2. inactivity, 3. negativism, and 4. interference with intellectual functions. Catalepsy may or may not be an additional feature. The syndrome may be present in all degrees, varying from a picture of simple dullness to one of complete vegetative immobility. Each of the symptoms is described during period of incubation, through the attack, and at all stages of recovery. Patients' own statements concerning their feelings and thoughts are stressed. These subjective accounts were obtained from cases of partial stupor, at times of remission from deep stupor, and retrospectively after recovery.

The mood reduction varies from simple quietness in mild cases, through growing indifference in others, to profound apathy with complete motor inactivity in the deep stupors. Confusion easily arises between apathy and depression, and discrimination of these two affect states is discussed at some length. On this subject Hoch states: "Running through all stages of stupor there is an emptiness, an indifference, that is in striking contrast to the positive pain that is felt or expressed by the depressed patient." He also emphasizes the greater interference with intellectual processes in the former condition, and points out characteristic differences in the manner of development and recovery in the two disorders.

The inactivity which is the second most important of the cardinal symptoms of stupor, includes both reduction of bodily movement and diminution or absence of speech. This condition like the other symptoms may be present in all degrees from reticence and slowness in mild cases, to the complete mutism, flaccidity of all voluntary muscles, and loss of sphincter control in deep stupor.

Negativism, Hoch characterizes as perversity of behavior expressing antagonism to the environment and to the wishes of those in attendance on the patient. He sees in the active opposition and cantankerousness often present in minor stupors, evidence of the "spoiled child" behavior which fits in with his conception that the whole syndrome is a manifestation of primitive infantile reactions. The muscular resistiveness of the deeper stupors, he thinks represents mainly a desire to be let alone, while the tendency for this trait to disappear as accessibility returns, "suggests that muscular resistiveness represents a lower level of expression of opposition which patients put into words or purposeful action when there is other evidence of contact with the environment." In this same connection he says: "In other words, the resistiveness looks like a larval attempt to express an idea which is probably not fully conscious and therefore gives the appearance of being aimless."

The interference with intellectual functions in deep stupor is profound. Indeed Hoch concludes that in such cases thinking processes are practically at a standstill, and notes as one fact to bear this out, that as a rule there is nearly complete amnesia for such periods. In milder cases there is a variable

degree of disorientation and incapacity to think out problems. There is lack of attention, shallowness of thinking and inability to grasp complicated questions. All of these thinking disorders, according to the author's observations, occur to an extent not usually found in depression.

In discussing the ideational content of stupor and the psychological explanation of its reaction Hoch leads into speculative paths difficult to follow by those not in sympathy with Freudian Psychology. He observes that in practically all cases of benign stupor ideas of death form the substance of the mental content. These are usually sharply circumscribed with little elaboration or distortion. In addition to literal death thoughts, there are often phantasies of being in the water, on a boat, or under ground. In the similarity of these latter ideas to those expressed in the mythology of all races, Hoch finds important significance. In both cases he feels that a primitive or "regressive" form of thought is in evidence. To consciously or unconsciously long for death in the face of sorrows or difficulties is a universal human tendency. A desire for the peace, security and absence of pain which such state implies, sweeps irresistibly over the human soul in distress. It is not, however, complete annihilation for which there is longing. Mixed with the thought of death is the hope for some sort of new and more satisfactory life, expressed in delusion, mythology and dream by the characteristic symbolization of rebirth. In strictly Freudian sense all this represents the striving to return to the mother, and in such light, the clinical picture may be interpreted as an attainment once again, in delusion and fantasy, of the protected state of the young infant, or even of fœtus yet unborn. In numerous instances death ideas concern joining dead relatives, usually father or mother, thus quite clearly carrying out the desire for infantile relationships. The "impulsive" suicidal attempts of patients which sometimes occur during stupor Hóch thinks may be motivated by these death ideas, in such cases the delusions varying in some way from the characteristic placid, affectless acceptance of non-existence. Anesthesia to pin pricks, immobility and a refusal to recognize existence, all fit appropriately into the picture of feigned death or delusions of death.

There is frequent reference throughout to differentiation of benign stupor from the malignant stupor state of Dementia Precox. In brief the latter cases show change of personality preceding the breakdown, inappropriateness of affect particularly giggling over unpleasant ideas, scattering speech when muteness is broken, and fantastic delusions; these latter in contrast to the circumscribed ideational content of benign stupor. The apathy of the Dementia Precox is not real lack of emotion but absorption in the subjective stream of fantasy, a "perversion," rather than absence, of interest and attention. The author notes that in stupor somatic symptoms are more in evidence than in other affect groups. It is his view, however, that physical signs are of secondary importance, and many rather speculative

hypotheses are advanced concerning their possible psychogenic origin. He sums up by the opinion that stupor, in common with all other morbid affect reactions, is probably based on some fundamental defect, partly physical in kind; but that the mental symptoms are determined wholly by psychological mechanisms.

This work of Hoch is something more than a consideration of one special type of mental disorder. In presenting his theme he touches on all phases of the functional psychoses and plunges courageously deep into the psychological obscurity which envelops them. The book should be an important milestone in psychiatric progress. One cannot read it without realizing anew how great a loss has come to the medical profession and the world at large, in Dr. Hoch's untimely death. M. W. Peck.

Foundations of Psychiatry. By William A. White, M. D., with an Introduction by Dr. Stewart Paton. New York and Washington: Nervous and Mental Disease Publishing Company, 1921. Pp. IX, 136. Price, $3.00.

So far as the majority of neuropsychiatrists are concerned, this monograph (number thirty-two of the Nervous and Mental Disease Series) is almost the first available discussion of the philosophy of psychiatry — and this would have been a very well suited name for it, although inconsistent with the well-known modesty of its author; but even he suggests this title. Stewart Paton of Princeton and Columbia, author of the recent "Human Behavior," says in his introducing note that the author "has pointed out what information is available for preparing the foundations of a science of human character. He has emphasized the driving power of the instinctive life, traced the genesis of the impulses, and has pointed out some of the prejudices and fixed ideas that are responsible for so much of the chaos in the World."

A serious review is bound to add that Professor White has pointed out not all of the "available information," because he is a Freudian of full blood; and that, for the most part, he has ignored those inhibitory aspects of personality without which man is still a brute and civilization more of a chaos than at the social protoplast. He has exploited well the "archepallium" but the "neopallium" that makes man human and sanctions his curious hind-leg gait and station (in all but a dozen or twenty important physiological respects), he has nearly forgotten or else ignored. And can a philosophy of psychiatry be published into general acceptance that neglects this one factor characteristic of mankind? The author, to be sure, has paid interested attention to certain extrinsic and environmental aspects of what amounts to this essential humanizing restraint, but to the intrinsic factors and processes of this indispensable integration apparently too little thought and space have been devoted, after the manner of the Master Freud. The present reviewer humbly believes that this is the weak-spot in this particular philosophic

thesis. To set forth, even adequately, the drive and the subconscious conflict unending and insistent, is not enough — we must take into larger consideration, much larger and deeper and more detailed consideration, the conscious struggles which even in dementia, from habituation, if from no other principle, tend so much to dominate the behavior and the whole mental life as it dwindles into effective nullity. We hear too little, in short, of inhibition in psychogenic theory, particularly of conscious inhibition becoming and become habitual. And what of caprice? And "chance"?

The book consists of two introductions (one by its author), a preface, seven textual chapters, a conclusion (in effect much of a summary), and an index, the bibliographic references being at the page-bottoms. These are the seven chapter-titles proper: "the unity of the organism," "the dynamics of the organism," "the stratification of the organism," "the region of psychopathology," "the nature of the neuroses and the psychoses," "therapeutics," and "the social problem." The total continuous integration of the personality on a metaphysically necessary basis of monism is the important guide-star of the exposition. Nothing could be more desired — save its logical completion as already has been suggested above. Freud's surpassing contribution to psychology is his clarification of the impulses to activity, but this seems no really excellent reason why all his followers should ignore the no less constructive considerations that explain the restraining humanity-element of man. These the author realizes but makes no effort to set forth, and we may well ask him why not. Human mind is *duplex*.

"The neurosis or psychosis is an expression of the blocking of the instinctive tendencies of the individual because they cannot become assimilated to his conscious purposes and the energy they contain be utilized in forward-living activities. The drive of these tendencies remains an emotional one which, striving to gain expression, meets with stabilized ways of traditional thinking to which it is inacceptable. In their effort to gain conscious expression they are forced to a seeming conformity with conventional ways of thinking and so in their real nature remain obscure and unintelligible to their host." In one paragraph this is the gist of this deep but narrow Freudian viewing of the philosophy of psychiatry. To the constructive, genetic psychologist who has dug for himself a somewhat wider well toward the heart of the mental world, this seems incomplete, because the human mind surely is more complex, contains more interests and processes, than Freudism allows. Even the most advanced brute minds may have more in them than so narrow a theory makes place for. Insanity may be as often due to a *lack* of conflict as to a conflict. Why not suppose that a catatonia, for example, may be a lack of impulse? etc., etc. No obsession can comprise reality.

The chapter on the unity of the organism, numbered two, is a concise and valuable exposition of the three biologic principles: integration, functional structuralization, and individuation.

These are further traced in the discussion of organic dynamism that makes up chapter three under the head of "ambivalency" — impulse intricately adapted, that is, restrained, a monistic duality obvious in the normal infant from birth and always after, however deeply camouflaged. As the present reviewer pointed out (in his "*Moto-Sensory Development*") a dozen years ago, the reflex inhibitions of the infant are pressingly in need of study. When this is adequately done we shall possess real material for really understanding "ambivalency" and scarcely before then. Herbert Spencer vaguely saw it all two score of years ago — the road to be trod — and Professor C. M. Child has trod it as rapidly as another and as straight, but he has not been alone.

Chapter four, on the organism's stratification, is a well-done exposition of a newer concept in the science of man and sets forth the kernel of Bergson's enlightening psychology, the inevitable continuation of the foundations laid simultaneously by Wm. James and himself, but made plainly coherent by the latter only in his very recent "Mental Energy." In this chapter, too, Professor White makes a few introductory applications to psychiatry, which get an inevitably tremendous interest from the phylogenic data borrowed from H. F. Osborn, and others. (We may well await with great interest Osborn's sequel-volume to his recent "Origin and Development of Life," for, it is rumored, it will concern itself in the main with man.)

The fifth chapter discusses certain more or less obvious criteria of mental abnormality as social in a social community, and contains beside much timely psychology. For example, it tersely stresses the supreme importance and yet the relative neglect by psychologists of the feelings in life both normal and insane.

One may denote the content of chapter six almost adequately by the word teleology as applied to such Freudian processes as repression, regression, censorship, conflict, symbolization, sublimation, etc. Janet, Jung, Adler, and Kempf are set forth in short form in relation to his present theme. He seems to give more credit to the last-named than may belong to him, just as he ascribes to the psychoanalysts credit that is properly due to the James-Lange theory of the emotions especially as tried out by some of the broader physiologists — sometimes against the latters' will!

Chapters seven and eight seem to be in reality little more than restatements and applications with relatively little of the constructive redintegration that characterizes the remainder of the monograph; but together they occupy but fourteen pages of text.

Altogether Doctor White's essay in the "philosophy of psychiatry" has the importance of a pioneer integrating treatise in a particular direction. Its chief defect indeed is the particularity of its direction, its lack of range over the circular compass-card of the well-rounded human mind, liable everywhere, like everything else that is "mortal," to defect or at least to derangement in its orientation and adjustment. GEORGE VAN NESS DEARBORN.

MYSTICISM, FREUDIANISM AND SCIENTIFIC PSYCHOLOGY. By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University, Baltimore. C. V. Mosby Co., St. Louis, Mo. Pp. 173.

Professor Dunlap has tried to put a great deal into this little volume which bears the inscription "To Morton Prince *Principi in Psychopathologia Americana.*" The first part of the book is historical; the second, critical and destructive, and the third, constructive. The author explains the unity of the book, which was at first to include an examination of spiritualism, by saying that all three movements which he has singled out for criticism "involve an assault on the very life of the biological sciences; an assault which scientific psychology alone is capable of warding off."

The author has set himself the task of combating both mysticism and Freudianism but the passages which he is citing from Plotinus and Mæterlinck do not involve any strictly psychological issues and should best be dealt with from the philosophical angle. "The psychologist holds that all knowledge may be included under the two headings above indicated. No knowledge which is neither perceptual nor inferential is taken account of by psychology. The mystic, on the other hand, holds that these two kinds of knowledge . . . do not exhaust the field. There is, the mystic insists, a *third kind of knowledge*" (p. 15). But why should this problem, a purely epistemological one, be argued out within the territory of a particular science? Does the physicist, who surely also believes in the sole authority of knowledge derived through the senses and inference, bother to compare his science with the pretensions of mysticism? And moreover, there is a possibility of the mystic retorting that his kind of knowledge *is* perceptual, whether *we* can perceive it or not.

The diagnosis of the mystic as one who is tender-minded and one who, in his realization that the road of science is hard, seeks an easy path, is true enough but to point out the logical fallacies of mysticism is, to my mind, a waste of energy; for no mystic cares one whit about the canons of the syllogism.

The chapter on mysticism seems to have been an introduction to the exposition of Freud and the critique of Psychoanalysis. Freud has had so many warm advocates of his views in this country and so few systematic critics among the psychologists that Dunlap's discussion is both timely and important. In this part, Dunlap gives a clear statement of the psychoanalyst position and attacks it on several grounds: (1) The fundamental notion of an unconscious consciousness is self-contradictory, (2) the explanation of phenomena is far-fetched, and (3) many interpretations that are satisfactory do not necessarily invoke any Freudian principles.

The author has selected a number of passages from the Freudian literature for the readers to pass judgment on. The absurdity in these citations is quite patent to all but Freudians. It does not seem to me, however, that

Dunlap has always brought forth the most appropriate analogies to confute the doctrine of Freud and his disciples, and the Freudians will probably consider his criticism as appearing in the following paragraph unfair.

"The Freudian hypothesis of infantile sex life is founded on the specific fallacy known to the logicians as the fallacy of *secundum quid*. Reactions which later become a part of the general sex activity are found in the child, and therefore pointed out as evidence of sex activity. It is as if one should claim that the labored breathing produced by running to catch a street car is sexual because the same labored breathing may occur during certain stages of sex activity. As a matter of fact, there is no form of activity, and no form of instinct of the individual which is not at some time or other connected with the sex life, and the final consequence of the Freudian method is to define sex as *the whole universe*, which would leave us to hunt for a new term to use for what is meant by sex in science and common sense."

As to the practical results of psychoanalysis, Dunlap makes the important observation that the fact that cures may be performed through the technique associated with the theories of psychoanalysis is of course no proof of the truth of these theories, and the long passage from Janet's appraisal of psychoanalysis is introduced to corroborate this view. The practical results of psychoanalysis are too often harped upon by practitioners as evidence of its theoretical validity.

Dunlap's criticism of Freudianism seems to be in the main sound, but it is surprising that he has confined himself to one or two phases of the Movement. He has not touched upon Freud's explanation of wit, his interpretation of myths and especially the doctrine of lapses which, as I tried to show elsewhere, is the most assailable of all of Freud's teachings.

The Third Chapter entitled *The Foundations of Scientific Psychology* contains an outline of Dunlap's psychological position. His attack on behaviorism will surprise a number of people who have read his indictment of introspectionism several years ago. I must confess that I had placed him among the radicals. His present utterances, however, would make him appear a conservative, albeit with a biological bias. The passage which, it seems to me, is most representative of the book is the following: "The Freudian doctrine of an unconscious-consciousness, is possible on no other basis than that of epistemological dualism. On this basis also develops 'behaviorism' which is the attempt to find the physiological factors which parallel the mind (conceived as a purely spiritual entity), in order to ignore the mind from that point on and deal only with its correlate in the other realm. Behaviorism depends on the theory of parallelism between "mind" and "body," whereas Freudianism apparently proceeds on the basis of interactionism, although it might possibly work as well on a parallelistic assumption. On a strictly psychobiological basis, empirically laid, neither of these arbitrary systems can be developed. Consciousness as actual awareness: objects of conscious-

ness treated as objects and not as awareness; leave nothing for further consideration except the biological processes with which the consciousness is actually organized, and the stimuli as physical concepts. Consciousness which is not consciousness is not empirically found: and since consciousness is not a *thing*, when it ceases to be consciousness it ceases to exist" (p. 122).

This little book is replete with information, but it does not present a unitary plan. The very title is not in accord with the principles of classification. The third part is at once too elementary and too technical. Perhaps this might be offered as the main criticism of the book, viz., that the author appears to address himself now to the psychologically uninitiated, the layman who has picked up his information in popular periodicals, and now to the specialist, or at any rate the trained man who has more than a smattering of psychology. The author has also taken the privilege to discuss his particular brand of psychology under the head of scientific psychology, to the exclusion of all other points of view. If Dunlap's purpose was to combat mysticism and Freudianism, he would have achieved it sooner by pitting the ordinary textbook psychology against the invaders instead of carrying on at the same time a polemic against both behaviorism and the older psychology. Much as I deplore the inroads of behaviorism into our academic strongholds, I hardly consider it apposite to mention behaviorism or even Freudianism together with Christian Science, as if they were all on one plane.

A. A. Roback.

Heredity and Environment in the Development of Men. By E. G. Conklin. Princeton University Press, revised third edition. XV + 361 pages, 101 illustrations.

It would be difficult to find a person better qualified to expound to the lay reader the chromosomal theory of inheritance than Professor Conklin, whose volume on "Heredity and Environment" has reached its third edition. This edition differs from the earlier ones in that certain materials have been rearranged, new illustrations have been added, and, to quote from the author, a much stronger position has been taken for the chromosomal theory. In the first chapter the reader is introduced to the chief conclusions of embryology preparatory to a consideration of heredity. The second chapter is taken up with the facts of heredity and the third with the relations of the cell to heredity and development. These two chapters are followed by sections that deal in sequence with the influence of the environment, eugenics, and genetics in relation to ethics.

The exposition of the subject centers on the third chapter in which the chromosomal theory is presented lucidly and succinctly. The exact parallel between the facts of Mendelian inheritance and the behavior of the chromosomes is dwelt upon with ample fulness and is illustrated by such matters as sex determination. For a long time it has been known that in the majority

of animals the two sexes are produced in approximately equal numbers. This condition is easily interpreted as a type of Mendelian inheritance and it is also reflected in the chromosomal composition of the germ cells. In most species, so far as the resulting sexes are concerned, all eggs are similar, but the sperm cells are of two types equal in numbers but different in chromosomal constitution. One of these types determines for male and the other for female. Hence sex is not only Mendelian in its mode of inheritance but the type of inheritance here involved has a chromosomal explanation. Furthermore the remarkable discovery that Mendelian characters are not isolated entities but travel in companies, so to speak, has led to very significant results, for, as Morgan and his associates have shown, the Mendelian characters in the fruitfly Drosophila are linked together in four specific groups, no more and no less, and the chromosomes in this fly are precisely four in number. Such facts and many other of a like kind are brought forward as striking evidence in favor of the chromosomal theory of inheritance.

The applications of these conclusions to human conduct are clearly and forcibly presented in the concluding part of the book. The author is to be commended for the sane position he has taken on the vexed questions of eugenics and the whole problem of the relation of genetics to human affairs is discussed in an interesting and illuminating way toward the end of the volume.

The shortcomings of the book are the shortcomings of the whole chromosomal proposition. Mendelian inheritance with its chromosomal counterpart is known in nature over only a limited range yet it is often implied that it is the only kind of inheritance among animals. The symmetry and general form of an organism is in many instances foreshadowed in its egg long before fertilization. This is a heritable trait, but it is difficult to regard it as Mendelian and there is no more certainty that it is chromosomal than that it is cytoplasmic. Yet this problem is lightly passed over with only the briefest consideration. The reader is further informed that inheritance as exemplified in the transmission of human property is a misleading idea when applied to organic heredity and yet this form of inheritance is precisely that which is shown in many instances of non-sexual reproduction. Were the scope of the book narrowed to Mendelian inheritance, its treatment would be admirable, but this is nowhere clearly suggested and the impression left on the mind of the lay reader must certainly be very one-sided.

A second general criticism that may be offered is that throughout the volume inheritance is treated as a static rather than a dynamic phenomenon. Emphasis is continually laid, for instance, upon chromosomes as bodies rather than upon their activities. Inheritance is an operation, not a substance, and while this operation goes on in substances the emphasizing of the material or statical side is to say the least misleading. It makes for what may be called a morphological conception of the chromosome rather than for the idea of the egg as an interacting system concerned primarily with the process of

inheritance. This static view pervades the whole volume and yet it is not peculiar to this book, for few workers on chromosomes have gained a dynamic conception of their subject.

As a piece of book-making the volume is in every way excellent. The press-work is admirably done and the illustrations are extremely clean and clear. Typographical mishaps and errors are unusually few. On page 136 the bottom line should be exchanged for the thirteenth line above and on page 210, twelfth line from below, the misspelling of alcohol is suggestive of a growing lack of familiarity with this interesting substance.

G. H. PARKER.

A NOTE ON DR. COOPER'S "EXTENSION OF THE PSYCHOANALYTIC METHOD."[8]

The problem of sex resistance is so obscure, and the apparent factors in it are so inadequate, as to give special interest to reinterpretations of the process. The kernel of Dr. Cooper's view is that it arises from the parent's endeavor to prohibit sexual reactions on the infant's part; the infant then inhibits through a fundamental desire to please the parent, and is gratified in so doing.

To regard any single factor of this order as the *fons et origo* of the repression seems inappropriate, but a real basis of discussion exists in weighing the comparative value of such a concept with other factors claiming consideration in this respect.

A grave difficulty before all interpretations of sex resistance is to find some factor sufficiently selective in its application to sexuality. The surface rationalizations of "naughty," "disgusting" and the like, are met by the fact that no such affect is carried by other topics equally naughty and far more disgusting. So in the present instance we must ask ourselves why the child's desire to please the parent should be concentrated on this topic rather than on the many other ways in which the parent may be pleased. To give the weaning process so great a rôle in the genesis of sex resistance offers a comfortable rationalization to the mother desiring to escape the restrictions of nursing; but the excretory reactions, which are homologues of sexual reaction in child life, are the cause of parental displeasure only when promiscuous and a conspicuous source of praise when exercised in due course.

The *Inzestverbot* of Jung, and the masturbation theory of Bleuler, both afford reasons why parental pleasure or displeasure in this topic might be invested with special affect. The two concepts are not mutually exclusive, but the *Inzestverbot* and the masturbation trends seem to rest in turn on a fundamental mechanism of regression. Regression — here conceived as a

[8] JOURNAL OF ABNORMAL PSYCHOLOGY, 1921, pp. 144-149.

primary resistance to overt action, not necessarily involving infantile elements — here takes a dominant rôle, the problem resolving itself largely into one of determining why it fastens especially on sexual mechanism.

The source of repression postulated by Dr. Cooper must be generally present, for none could grow up without "foregoing some sexual act for which the beloved parent showed displeasure" except orphans and eunuchs. Like all psychic traumata, they are more common than the mental difficulties they color. The underlying factor is always the circumstance or train of circumstances that so maladjusted the individual to this experience as to occasion pathological reaction thereto. Such an underlying factor in psychoneurosis is disorder of instinctive life, e. g. a special regressive tendency. Under these conditions a repressing wish to "please the parent" is reinforced by the individual's underlying antisexual trends, and only when similarly reinforced may it become effective in sex-resistance. Should we not be greatly on our guard that the patient does not invoke parental influence as a kind of "projection," a shouldering on the environment of something which is fundamentally the individual's?

It is often tempting to regard memories given under psychoanalysis as of inspired verity. But there are such things as illusions of memory (who knows it better than the psychoanalyst?) and one's ideas of the mental processes of such early times are tremendously subject to coloration by attitudes of later development. This may be of little moment in the management of the individual case but makes it hazardous in the extreme to base generalizations upon infantile complexes in adult retrospect. The introspective account included by Dr. Cooper indeed accords precisely with his view of the situation; but it is couched in the jargon of psychoanalysis and open to too many possibilities of suggestion to carry much weight as it stands.

There are said to be three ways of becoming rich: (a) doing something better than anybody else, (b) doing something before anybody else, (c) doing something nobody else wants to do. The first two apply to intellectual no less than economic achievement, nor has the third been a wholly impassable way to Minerva's favor. Dr. Cooper needs not the last ground for his claim on attention, for the topic is of interest to every one. The contribution is actually offered in the second way of distinction, an initial approach to its subject, and seems to illustrate a danger inherent in aspirations to priority. Some one else may be equally jealous of a similar claim. It can never mean more than that the author has seen no previous work, and leaves one open to embarrassment on finding other work that one should not have omitted to recognize. "*On n'est jamais le premier.*" In fact, Jung's *Wandlungen und Symbole* contains a searching discussion of the problem of sex-resistance. From another angle, Bleuler has made a briefer contribution to the question. These, both alluded to above, are quite direct references, but hardly exhaust the literature of the topic. Psychoanalysis means as such the pursuit of

successive sources of resistance, each underlying the last. Why stop with the desire to please (or fear to displease) an infantile love-object? Whence such a desire to please the love-object? Do we not predicate mental processes rather complicated for the infantile level? The dominant complex of this period is autoerotic; what reason is there to give to "heterosexual" or "objectified" trends the prominence at this period which Dr. Cooper's views demand?

A defense mechanism somewhat favored in psychoanalysis has been that whoever disagrees demonstrates his own resistance to disagreeable truth. In conclusion Dr. Cooper turns their own guns upon the psychoanalysts with the suggestion that their own resistance may interfere with the acceptance of his present observations. This position is an autistic Torres Vedras that no criticism can penetrate. It is similarly without value for getting into co-operative touch with the intellectual environment. F. L. Wells.

A Study of the Mental Life of the Child. By Dr. H. von Hug-Hellmuth; Translated from the German by James J. Putnam, M. D., Harvard Medical School, and Mabel Stevens, B. S., Wellesley. Washington: Nervous and Mental Disease Publishing Company, 1919. Pp. XIII, 154. Price, $2.00 or more.

This Freudian monograph is number twenty-nine in the Nervous and Mental Disease Series. It is one of the very few discussions in English of the early life of the child from the original Freudian viewpoint. This time the author is a woman and she unintentionally reveals a bit of the fallacious reasoning, defective logic-mechanism, not infrequent in the crude doctrines of Freud; witness the following from the introduction: "As a matter of fact, the infant who finds a source of pleasure in strong muscular activity always exhibits outward signs of emotion, such as increased brilliancy of the eyes, flushed cheeks, and so forth, that are well known to the adult as indications of sexual excitement." That is to say, exercise flushes the cheeks; sexual excitement flushes the cheeks: Therefore exercise is sexual excitement, "muscle-erotic." Exercise hastens the heart; sexual excitement hastens the heart: Therefore tachycardia is due to sexual excitement — would be just as scientific, precisely as true. On page 88 one rejoices in the following grotesque Freudism: "*Pleasure in such occupation [comparing penile lengths] explains, too, why boys, — as a rule, — acquire a real familiarity with numbers and figures earlier than do girls.*" The present reviewer respectfully presents this as a bit of wisdom characteristic of Freudism not yet regenerate. "The act of casting something at an object, aiming at something, could be considered as a symbol of erection, which may occur even at an early age," etc. Who would not a Freudian be! (The line forms on the right, gentlemen.)

But of course Jung has helped us to forget these things, and Kempf is

still helping; and often before a great man has been made ridiculous by his disciples, — if Frau Hug-Hellmuth may be so designated.

As a contribution to genetic psychology there is relatively little that is worth while in this monograph, and partly because what few original paidologic observations there are are sullied by an interpretation without sanction — sex, and always sex, runs universally through the book almost ad nauseam. One can read between the lines the obsession of the author; and empathy does the rest. She applies this unilateral sort of interpretation even to the observations of others. For example: "We have no such detailed records before us about any other child, concerning pleasure in climbing, as we have about Shinn's niece, Ruth. The writer does not suggest the sexual significance of this kind of muscular activity, but its presence can be recognized from the abandon with which the child carries on these exercises, from her persistence in performing them, and from the strong pleasurable reaction which they excite." In other words, all pleasure is sexual, to this author.

G. V. N. D.

HUMAN EFFICIENCY AND LEVELS OF INTELLIGENCE. By Henry Herbert Goddard. Princeton University Press, Princeton, New Jersey, 1920. 128 pages. Price $1.50 net.

This excellent and interesting book is an attempt to generalize in the application of findings of the psychological examination of the Army during the late war. Society is seen classified according to levels of intelligence. The first chapter deals with the method and data of the Army tests. The application of this material in producing greater efficiency throughout mankind is discussed in the next chapter. Then the relation between mental level and delinquency follows: Lastly, mental levels and democracy, culminating in a climax with an ideal expressed in this paragraph (page 97):

> "The disturbing fear is that the masses — the seventy million or even eighty-six million — will take matters into their own hands. The fact is, matters are already in their hands and have been since the adoption of the Constitution. But it is equally true that the eighty-six million are in the hands of the fourteen million or of the four million. Provided always that the four million apply their very superior intelligence to the practical problem of social welfare and efficiency."

The book is stimulating and plausible, but overdone. The analogy between the printing press and the brain, which forms the basis of a good deal of the argument, is weak when so much data is at hand. The importance of the level of intelligence is stressed at the expense of environmental factors, for instance. The statement that the average person is probably between thirteen and fourteen years of age intellectually needs qualification before entering popular literature. Such statements as (page 72)—

> . . . "It is sufficient to state that every investigation of the mentality of criminals, misdemeanants, delinquents and other anti-social groups has proven beyond the possibility of contradiction that nearly all persons in these classes and in some cases all are of low mentality"

and (page 73) —

> "In view of these facts it is no longer to be denied that the greatest single cause of delinquency and crime is low-grade mentality, much of it within the limits of feeble-mindedness"

show the book to be intemperate.

The book is a noteworthy contribution, and should be widely read; but it ought to be regarded as an extreme presentation of the place of mental testing.

A. Warren Stearns.

The Psychology of Learning. By William H. Pyle, professor of Educational Psychology, University of Missouri. Baltimore: Warwick and York, 1921. Pp. 293. Figs. 36.

The ambition of the author, according to his preface, is to summarize in one volume "everything that is known about learning." We have long needed a compilation of the results of experiments upon learning into a ready reference text. Prior to the appearance of Professor Pyle's book the sources of information were so widely scattered that a comparative study of material was exceedingly difficult to make. For our convenience the author has reviewed in his little book over two hundred published experiments, and at the conclusion of each topic has summarized the findings and has drawn well warranted conclusions. Thus we find convenient digests of studies pertaining to the learning curve, economical learning, retention, individual differences in learning, transference and interference, and fatigue. Each chapter is rich in material succinctly presented. It is to be regretted, however, that the author has seen fit to break into the experimental trend of his treatise with an unnecessary chapter devoted to speculation upon the inborn nature of man.

There is no discussion in the book of the influences of various types of imagery upon learning. The differences in the speed of acquisition and in the capacity for retention which are found among various imagery types are important for educational psychology. Reliable work relating to the presentation of material to the visual, auditory, motor, and mixed types has been done by O'Brien, Meumann, Pohlmann, and Thorndike. An account of their experiments should not be omitted from a text which purposes to include everything that is known about learning.

There can be no doubt that the work is remarkably comprehensive (almost as comprehensive as the author's claim for it); it is in addition

clear and compact. The book should serve well the purpose for which it was intended, an advanced text in educational psychology.

GORDON W. ALLPORT.

THE VALUE OF SCHOOL SUPERVISION. By Marvin S. Pittman, professor of Rural Education, Michigan State Normal School. Baltimore: Warwick and York, 1921. Pp. 126.

This little book describes the effect of supervision upon the work of rural schools when the supervision is made according to the Zone Plan. The author himself is the inventor of the Zone Plan which provides for systematic supervision of class room instruction, for convenient and effective teachers' meetings, and for the arousal of community consciousness in behalf of school problems and school progress. The experiment with the Zone Plan produced notable results when comparison was made between the territory supervised and the control territory which was not supervised. The beneficial results of the plan are to be seen in the improvement in scholarship, in a financial saving by a reducing of the number of children repeating grades, in an increased school attendance, and in a promotion of neighborhood organization and community spirit. G. A.

STATE MAINTENANCE FOR TEACHERS IN TRAINING. By Walter S. Hertzog. Baltimore: Warwick and York, 1921. Pp. 144.

This study analyzes the problem of the shortage of well trained teachers in our public schools. State subsidy of teachers in training is considered from the point of view of precedent, with a careful weighing of the advantages and disadvantages of this practice. The study concludes on the basis of statistical evidence that laws should be adopted in all states to provide for tuition and scholarships of at least three hundred dollars annually for two years of training for qualified candidates. Several samples of current legislation in behalf of financial aid to teachers in training are appended. G. A.

PERIODIC VARIATIONS IN EFFICIENCY. By Archibald G. Peaks. Baltimore: Warwick and York, 1921. Pp. 93. Educational Psychology Monograph, No. 23.

The rhythms of efficiency are studied in relation to the influences of bodily condition, the time of day, week or year, and of weather conditions. The author's faithful experimentation during long periods of time makes an interesting chapter in the technique of experimental psychology. The monograph contains likewise a review and criticism of previous studies relating to the periodic changes in mental and physical efficiency. G. A.

A CORRECTION

To the Editor of the Journal of Abnormal Psychology and Social Psychology:

Sir:

In my account of Dr. William McDougall's position on the theory of instinct, in a recent article in the Journal entitled "The Dilemma in the conception of instinct," I quoted only from his discussions of the subject in Body and Mind; and my colleague reminds me that this hardly does proportionate justice to other aspects of his theory. The following propositions will give a more adequate account of Dr. McDougall's position:

(1) Instinctive activity, like all other mental activity, is essentially purposive.

(2) It is probable that all purposive activity will remain refractory to mechanical explanation (Body and Mind).

(3) But if such explanation should be achieved (and Dr. McDougall has himself advanced hypotheses which would go far, not indeed toward meeting the objections urged in Body and Mind, but toward filling the gap left by current hypotheses, as in American Journal of Insanity, 1913, pp. 861–872), the essential thesis, that instinctive activity is purposive, remains standing.

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